CITY OF ROCHESTER
201 4TH STREET SE, ROOM 108
ROCHESTER, MN 55904-3742
********PROPOSAL*********

FOR HIGHWAY CONSTRUCTION
AND MAINTENANCE PROJECTS WITH
BIDS RECEIVED UNTIL 11:00 O'CLOCK A.M. ON **Sept 26, 2012**

PROPOSAL OF _____
(Name of Firm) (Phone No.)

_____
(Address) (Fax No.)

_____
(City) (State) (Zip)

TO FURNISH AND DELIVER ALL MATERIALS AND TO PERFORM ALL WORK IN ACCORDANCE WITH THE CONTRACT, THE PLANS AND THE APPROVED DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 2005 EDITION, EXCEPT AS STATED OTHERWISE IN THE SPECIAL PROVISIONS WHICH ARE PART OF THIS PROPOSAL, FOR

CITY PROJECT NO. **6311-2-11** J NO. **(J7911)**

STATE PROJECT NO. **159-080-016**

MINNESOTA PROJECT NO. _____

LOCATION: **10th Ave SE, ROCHESTER, MN**

TYPE OF WORK **Grading, Surfacing and Culvert Bridge Replacement**

LENGTH **0.1** MILES STARTING DATE: **April 1, 2013**

COMPLETION DATE: **June 15, 2013**

I certify that this Proposal was prepared by me or under my direct supervision, and that I am a licensed professional engineer under the laws of the State of Minnesota.

Russell J. Kelm 09/05/2012
Russell J. Kelm, License Number 24667 (Date)

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BID RIGGING IS A SERIOUS CRIME. IF YOU HAVE ANY INFORMATION CONCERNING COLLUSIVE BIDDING, EVEN A REQUEST TO SUBMIT A COMPLIMENTARY BID, PLEASE CALL THE MINNESOTA ATTORNEY GENERAL'S OFFICE AT TELE. NO. 651-296-1796

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CITY OF ROCHESTER
NOTICE OF BIDS

Notice is hereby given that bids will be received at the office of the City Clerk until **11:00 A.M. on Sept 26, 2012** for the construction of the following described local improvement, pursuant to Minnesota Statutes, Chapter 429, as amended, in accordance with the plans and specifications for the same which are on file in the Office of the City Clerk of said City:

State Aid Project 159-080-016
City No. 6311-2-11 (J7911)
J7911 Replace 10th Ave SE Bridge (BR#L6362) between 4th Street SE and 6th Street SE with (BR#55J89)

Immediately following expiration of the time for receiving bids, the City Clerk and two designated City officials will publicly open said bids in the City Hall and tabulate them in advance of the Council meeting. The Common Council will consider the bids in the Council/Board Chambers at the Government Center **at 7:00 P.M.** on **October 1, 2012.**

Said Construction generally consists of **Bridge and Road Reconstruction**. The work includes the following approximate quantities of work:

COMMON EXCAVATION (P)	68.00	C Y
AGGREGATE BASE (CV) CLASS 5	113.00	C Y
CONCRETE PAVEMENT	171.00	S Y
STRUCTURAL CONCRETE	33.00	C Y
REINFORCEMENT BARS (EPOXY COATED)	1,400.00	LB
MODULAR BLOCK RETAINING WALL SPECIAL	62.00	S Y
73" SPAN RC PIPE-ARCH CULV CL IIIA	240.00	L F
12 -15" RC PIPE SEWER	148.00	L F
12" WATERMAIN DUCTILE IRON CL 52	128.00	L F
5-6" CONCRETE WALK	702.00	S F
CONCRETE CURB & GUTTER DESIGN B624	209.00	L F
SODDING TYPE MINERAL	349.00	S Y

Plan, Specifications and Contract Documents may be examined at the Department of Public Works, 201 4th St. SE, Room 108, Rochester, MN 55904, (507) 328-2400 or the City's website at https://egram.rochestermn.gov/.

Each bid must be sealed and accompanied by a cash deposit, bid bond, cashier's check or a certified check payable to the City of Rochester, Minnesota, for at least **5%** the amount of the bid, which amount shall be forfeited to the City of Rochester, Minnesota, as liquidated damages if the bidder, upon the letting of the contract to him shall fail to enter into the contract so let; the Common Council reserving the right to reject any and all bids.

A Performance and Payment Bond for the full amount of the contract by a surety company authorized to do business in the State of Minnesota will be required with the contract. (Personal bonds will not be accepted.)

All proposals must be addressed to the City Clerk, City of Rochester, 201 4th St. SE, Room 135, Rochester, Minnesota 55904-3742 and shall have endorsed thereon:

State Aid Project 159-080-016
City No. 6311-2-11 (J7911)
J7911 Replace 10th Ave SE Bridge (BR#L6362) between 4th Street SE and 6th Street SE with (BR#55J89)

Dated at Rochester, Minnesota this **5th day of September, 2012.**

JUDY K. SCHERR, CMC, City Clerk

NOTICE TO ALL BIDDERS -- TO REPORT BID RIGGING

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above tollfree "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

Department of Public Works
201 4th Street SE, Room 108
Rochester, MN 55904-3740
(507) 328-2400

DEPARTMENT OF TRANSPORTATION

NOTICE OF DEBARMENT

NOTICE IS HEREBY GIVEN that MnDOT has ordered that the following vendors be debarred for a period of three (3) years, effective February 24, 2010 until February 24, 2013:

- Joseph Edward Riley, Morris, MN
- John Thomas Riley, Morris, MN

NOTICE IS HEREBY GIVEN that MnDOT has ordered that the following vendors be debarred for a period of three (3) years, effective March 25, 2011 until March 25, 2014:

- Philip Joseph Franklin, Leesburg, VA
- Franklin Drywall Inc. and its affiliates, Little Canada, MN
- Master Drywall Inc. and its affiliates, Little Canada, MN

NOTICE OF SUSPENSION

NOTICE IS HEREBY GIVEN that the Department of Transportation ("MnDOT") has ordered that the following vendors be suspended for a period of sixty (60) days, effective June 8, 2012 until August 7, 2012:

- Marlon Louis Danner and his affiliates, South St. Paul, MN
- Danner, Inc. and its affiliates, South St. Paul, MN
- Bull Dog Leasing, Inc. and its affiliates, Inver Grove Heights, MN
- Danner Family Limited Partnership and its affiliates, South St. Paul, MN
- Ell-Z Trucking, Inc. and its affiliates, South St. Paul, MN
- Danner Environmental, Inc. and its affiliates, South St. Paul, MN

Minnesota Statute section 161.315 prohibits the Commissioner, counties, towns, or home rule or statutory cities from awarding or approving the award of a contract for goods or services to a person who is suspended or debarred, including

1) any contract under which a debarred or suspended person will serve as a subcontractor or material supplier,

2) any business or affiliate which the debarred or suspended person exercises substantial influence or control, and

3) any business or entity, which is sold or transferred by a debarred person to a relative or any other party over whose actions the debarred person exercises substantial influence or control, remains ineligible during the duration of the seller's or transfer's debarment.

DEPARTMENT OF ADMINISTRATION

The Department of Administration in accordance with Minnesota Rules 1230.1150 has debarred and disqualified the following persons and businesses from entering into or receiving a State of Minnesota contract.

NAME	DATE OF DEBARMENT
Alternative Counseling Clinic 337 97th Lane NE Minneapolis, MN 55434	Oct. 22, 2008 through Oct. 22, 2011 (eligible for reinstatement on Oct. 22, 2012)
Bull Dog Leasing, Inc. 7854 Danner Court Inver Grove Heights, MN 55076	Aug. 30, 2011 through Aug. 30, 2014 (eligible for reinstatement on Aug. 30, 2015)
Danner Family Ltd. Ptnship. 843 Hardman Ave. S. S. St. Paul, MN 55075	Aug. 30, 2011 through Aug. 30, 2014 (eligible for reinstatement on Aug. 30, 2015)
Danner, Inc. 843 Hardman Ave. S. S. St. Paul, MN 55075	Aug. 30, 2011 through Aug. 30, 2014 (eligible for reinstatement on Aug. 30, 2015)
Ell-Z Trucking, Inc. 843 Hardman Ave. S. S. St. Paul, MN 55075	Aug. 30, 2011 through Aug. 30, 2014 (eligible for reinstatement on Aug. 30, 2015)
Franklin Drywall, Inc. 43279 Fieldsview Crt. Leesburg, VA 20176	March 25, 2011 through March 25, 2014 (eligible for reinstatement on March 25, 2015)
Master Drywall, Inc. 43279 Fieldsview Crt. Leesburg, VA 20176	March 25, 2011 through March 25, 2014 (eligible for reinstatement on March 25, 2015)
Riley Brothers Construction PO Box 535 Morris, MN 56267	Nov. 9, 2009 through Nov. 9, 2012

Minnesota Administrative Rule part 1230.1150, subpart 6 requires the Materials Management Division to maintain a master list of all suspensions and debarments. The master list must retain all information concerning suspensions and debarments as a public record for at least three (3) years following the end of a suspension or debarment. Refer to the following website for the master list: http://www.mmd.admin.state.mn.us/debarredreport.asp.

If the project is financed in whole or in part with federal funds, refer to the following website for vendors debarred by federal government agencies: https://www.epls.gov/.

Rev. 12/18/2006

STATE FUNDED CONSTRUCTION CONTRACTS
SPECIAL PROVISIONS DIVISION A - LABOR
April 7, 2006

PREAMBLE

It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.[1]

Therefore, the department shall administer this contract pursuant to the **State of Minnesota Statutes and Rules, MNDOT's Standard Specifications for Construction, MNDOT's Contract Administration Manual, MNDOT's State Aid Manual** and applicable federal labor regulations.

DEFINITIONS[2]

A. **Contract:** The written agreement between the contracting authority and the prime contractor setting forth their obligations, including, but not limited to, the performance of the work, the furnishing of labor and materials, the basis of payment, and other requirements contained in the contract documents.

B. **Contracting Authority:** The political subdivision, governmental body, board, department, commission, or officer making the award and execution of contract as the party of the first part.

C. **Contractor:** The term "contractor" in these provisions shall include the prime contractor, subcontractor, agent, or other person doing or contracting to do all or part of the work under this contract[3]

D. **Department:** The Department of Transportation of the State of Minnesota, or the political subdivision, governmental body, board, commission, office, department, division, or agency constituted for administration of the contract work within its jurisdiction.

E. **First Tier Subcontractor:** An individual, firm, corporation, or other entity to which the prime contractor sublets part of the contract.

F. **Independent Truck Owner/Operator (ITO):** An individual, partnership, or principal stockholder of a corporation who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity that provides construction services to a public works project.[4]

G. **Laborer or Mechanic:** A worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.[5]

H. **Plan**: The plan, profiles, typical cross-sections, and supplemental drawings that show the locations, character, dimensions, and details of the work to be done.

I. **Prime Contractor**: The individual, firm, corporation, or other entity contracting for and undertaking prosecution of the prescribed work; the party of the second part to the contract, acting directly or through a duly authorized representative.

J. **Project**: The specific section of the highway, the location, or the type of work together with all appurtenances and construction to be performed under the contract.

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1 Minnesota Statute 177.41
2 MNDOT Standard Specifications for Construction, Section 1103
3 Minnesota Statute 177.44, Subdivision 1
4 Minnesota Rules 5200.1106, Subpart 7(A)
5 Minnesota Rules 5200.1106, Subpart 5(A)

K. **Second Tier Subcontractor:** An individual, firm, corporation, or other entity to which a first tier subcontractor sublets part of the contract.

L. **Special Provisions:** Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.

M. **Specifications:** A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

N. **Subcontractor:** An individual, firm, corporation, or other entity to which the prime contractor or subcontractor sublets part of the contract.

O. **Substantially In Place:** Mineral aggregate is deposited on the project site directly or through spreaders where it can be spread from or compacted at the location where it was deposited.[6]

P. **Trucking Broker:** An individual or business entity, the activities of which include, but are not limited to: contracting to provide trucking services in the construction industry to users of such services, contracting to obtain such services from providers of trucking services, dispatching the providers of the services to do work as required by the users of the services, receiving payment from the users in consideration of the trucking services provided and making payment to the providers for the services.[7]

Q. **Trucking Firm/Multiple Truck Owner (MTO):** Any business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects.[8]

R. **Work:** The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract upon the contractor. Also used to indicate the construction required or completed by the contractor.

SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT

A. These provisions shall apply to this contract, which is funded in whole or part with state funds.[9]

B. These provisions shall apply to the prime contractor and all subcontractors contracting to do all or part of the work under this contract[10]

C. The provisions established in this document do not necessarily represent all federal, state, and local laws, ordinances, rules and regulations. It is the responsibility of the prime contractor to inform itself and all subcontractors about other regulations that may be applicable to this contract.

D. The prime contractor is responsible to ensure that each subcontractor performing work under this contract receives copies of all required contract provisions. These provisions shall be incorporated into written subcontracts and must be displayed on the poster board.[11]

E. The department shall administer this contract in accordance with all applicable state statutes and rules,[12] along with the plans, specifications and provisions, which are incorporated into and found elsewhere in this contract.

F. An unpublished decision from the Minnesota Court of Appeals affirms the authority of the Minnesota Commissioner of Transportation to enforce the Minnesota Prevailing Wage Law on a case-by-case basis.[13]

[6] Minnesota Rules 5200.1106, Subpart 5(C)
[7] Minnesota Rules 5200.1106, Subpart 7(C)
[8] Minnesota Rules 5200.1106, Subpart 7(B)
[9] Minnesota Statute 177.41
[10] Minnesota Statute 177.44, Subdivision 1
[11] Minnesota Statute 177.44, Subdivision 5
[12] Minnesota Rules 8820.3000, Subpart 2
[13] Minnesota Court of Appeals Case Number: C6-97-1582

G. For additional information refer to: www.dot.state.mn.us/const/labor/.

PAYROLLS AND STATEMENTS

A. All contractors shall submit a payroll statement to the department.[14] The statement shall be submitted based on the contractor's payment schedule. If a contractor pays its employees weekly, a payroll statement shall be submitted weekly. If a contractor pays its employees biweekly, a payroll statement shall be submitted biweekly.[15] All contractors shall pay its employees at least once every 15 days on a date designated in advance by the employer.[16] Each statement submitted shall include all employees that performed work under this contract and provide at a minimum the following information:[17]

1. Contractor's name, address, and telephone number.
2. State project number.
3. Payroll report number.
4. Project location.
5. Workweek ending date.
6. Name, social security number, and home address for each employee.
7. Labor classification(s) and/or three-digit code for each employee.
8. Hourly straight time and overtime wage rates paid to each employee.
9. Daily and weekly hours worked in each labor classification, including overtime hours for each employee.
10. Authorized legal deductions for each employee.
11. Project gross amount, weekly gross amount and net wages paid to each employee.

B. Payroll records may be submitted in any form provided it includes all the information contained in **Subpart A (1 - 11)** of this section. However, contractors needing a payroll form may utilize the "front side" of the **U.S. Department of Labor's, WH-347 - Payroll Form**. This form is available by visiting the Labor Compliance website.[18]

C. All payroll records must be accompanied with a completed and signed **MNDOT, 21658 - Statement of Compliance Form**.[19]

D. The prime contractor is responsible for assuring that its payroll records and those of all subcontractors include all employees that performed work under this contract and accurately reflect the hours worked, regular and overtime rates of pay and classification of work performed.[20]

E. The prime contractor is responsible to maintain all certified payroll records, including those f all subcontractors, throughout the course of a construction project and retain all records for period of three years after the final contract voucher has been issued.[21]

F. At the end of each pay period, each contractor shall provide every employee, in writing, an accurate, detailed earnings statement.[22]

[14] Minnesota Statute 177.44, Subdivision 7
[15] MnDOT Contract Administration Manual, Section .320
[16] Minnesota Statute 181.10
[17] Minnesota Rules 5200.1106, Subpart 10 and Minnesota Statute 177.30
[18] www.dot.state.mn.us/const/labor/
[19] Minnesota Rules 5200.1106, Subpart 10
[20] Minnesota Statute 177.30(1)(2)(3)(4)
[21] Minnesota Statute 177.30(4)
[22] Minnesota Statute 181.032

G. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of payroll records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.[23]

H. At the department's discretion, the project engineer may administer the submission of payroll records according to MNDOT's Payroll Maintenance Program. The guidelines for the implementation and administration of this program are outlined in the **MNDOT Contract Administration Manual, Section A(4)(d)**.

I. If, after written notice, the prime contractor fails to submit its payroll reports and certification forms and those of any subcontractor, the department may implement the actions prescribed in section **XVI (NON-COMPLIANCE AND ENFORCEMENT)**.

WAGE RATES

A. The prime contractor is responsible to ensure that its workers and those of all subcontractors are compensated according to the MN/DLI state prevailing wage determination(s) incorporated into and found elsewhere in this contract. All contractors shall pay each worker the required minimum total hourly wage rate for all hours worked on the project and for the appropriate classification of labor.
    1. State highway and heavy wage determinations are issued for ten separate regions throughout the state of Minnesota. If the contract work is located in more than one region, the applicable wage decision for each region shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state highway and heavy wage determinations, there shall be only one standard of hours of labor and wage rates. [24]
    2. State commercial wage determinations are issued for each county throughout the state of Minnesota. If the contract work is located in more than one county, the applicable wage determination for each county shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state commercial wage determinations, there shall be only one standard of hours of labor and wage rates.[25]

B. Wage rates listed in the state wage determination(s) contain two components: the hourly basic rate and the fringe rate; together they equal the total prevailing wage rate. A contractor shall compensate a worker at a minimum, a combination of cash and fringe benefits equaling the total prevailing wage rate.[26]

C. The applicable certified wage decision(s) incorporated into and found elsewhere in this contract remain in effect for the life of this contract. The wage decision(s) do not necessarily represent the workforce that can be obtained at the rates certified by the MN/DLI. It is the responsibility of the prime contractor and any subcontractor to inform themselves about local labor conditions and prospective changes or adjustments to the wage rates. No increase in the contract price shall be allowed or authorized due to wage rates that exceed those incorporated into this contract.

D. A contractor shall not reduce a worker's private, regular rate of pay when the wage rate certified by the MN/DLI is less than the worker's normal hourly wage.[27]

E. From the time a worker is required to report for duty at the project site until the worker is allowed to leave the site, no deductions shall be made from the worker's hours for any delays of less than twenty consecutive minutes.[28]

[23] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10
[24] Minnesota Statute 177.44, Subdivision 4
[25] Minnesota Statute 177.44, Subdivision 4
[26] Minnesota Statute 177.42, Subdivision 6
[27] Minnesota Statute 181.03, Subdivision 1(2)
[28] Minnesota Rules 5200.0120,Subpart 1

F. In situations where a delay may exceed twenty consecutive minutes and the contractor requires a worker to remain on the premises or so close to the premises that the worker cannot use the time effectively for the worker's own purposes, the worker is considered "on-call"[29] and shall be compensated in accordance with **Subpart B** of this section, unless the worker is allowed or required to leave the project site.

G. A contractor making payment to an employee, laborer, mechanic, worker, or truck owner-operator shall not accept a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.[30]

H. Any employee who knowingly permits a contractor to pay less than the total prevailing wage or gives up any part of the compensation to which the employee is entitled may be subject to penalties[31]

BONA FIDE FRINGE BENEFITS

A. A "funded" fringe benefit plan is one that allows the contractor to make irrevocable contributions on behalf of an employee to a financially responsible trustee, third person, fund, plan or program, without prior approval from the U.S. Department of Labor. Types of "funded" fringe benefits may include, but are not limited to: pension, health and life insurance.[32]

B. An "unfunded" fringe benefit plan or program is one that allows the contractor to furnish an in-house benefit on behalf of an employee. The cost to provide the benefit is funded from the contractor's general assets rather than funded by contributions made to a trustee, third person, fund, plan or program. Types of "unfunded" fringe benefits may include, but are not limited to: holiday plans, vacation plans and sick plans.[33]

C. . Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:[34]

1. include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;
2. are legally enforceable;
3. have been communicated in writing to the employee; and
4. are made available to the employee once he/she has met all eligibility requirements.

D. No credit shall be allowed for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.[35]

E. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of fringe benefit records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.[36]

F. In addition to the requirements set forth in **Subpart C** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state fringe benefit regulations that may be applicable to this contract.

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[29] Minnesota Rules 5200.0120, Subpart 2
[30] Minnesota Rules 5200.1106, Subpart 6
[31] Minnesota Statute 177.44, Subdivision 6
[32] 29 CFR Parts 5.26 and 5.27
[33] 29 CFR Part 5.28
[34] 29 CFR Part 5.23
[35] 29 CFR Part 5.29(f)
[36] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

G. Contractors shall submit a completed and signed **MNDOT, 21658 - Statement of Compliance Form,** identifying any fringe contributions made on behalf of a worker.[37] The form must be submitted in accordance with section **IV (PAYROLLS AND STATEMENTS), Subparts A and C.**

H. H. Pursuant with ***Minnesota Statute 181.74, Subdivision 1***, a contractor that is obligated to deposit fringe benefit contributions on behalf of its employees into a financially responsible trustee, third person, fund, plan, or program and fails to make timely contributions may be guilty of a gross misdemeanor. A contractor found in violation of the above-mentioned statute shall compel the department to take such actions as prescribed in section **XVI, (NONCOMPLIANCE AND ENFORCEMENT).**

OVERTIME

A. A contractor shall not permit or require a worker to work longer than the prevailing hours of labor unless the worker is paid for all hours in excess of the prevailing hours at a rate of at least 1-1/2 times the hourly basic hourly rate of pay. [38] The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.[39]

B. In addition to the requirements set forth in **Subpart A** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state overtime regulations that may be applicable to this contract.

LABOR CLASSIFICATIONS

All contractors shall refer to the state wage determination(s) incorporated into and found elsewhere in this contract or the Master Job Classification List[40] to obtain an applicable job classification. If a contractor cannot determine an appropriate job classification, state law requires that the worker be assigned a job classification that is the "same or most similar".[41] Contractors needing clarification shall contact MN/DLI or the MNDOT Labor Compliance Unit at (651) 296-6503.

INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS AND FOREMAN

A. An independent contractor performing work as a laborer or mechanic is subject to the contract prevailing wage requirements[42] for the classification of work performed and shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS).** In order to ensure compliance, the department may examine the subcontract agreement to determine if the bid price submitted covers the applicable prevailing wage rate for the number of hours worked, along with other records, deemed appropriate by the department.[43]

B. Pursuant with state regulations, owners, supervisors and foreman performing work under the contract[44] shall be compensated in accordance with section **V (WAGE RATES).** Furthermore, the prime contractor and any subcontractor shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS).**

[37] Minnesota Rules 5200.1106, Subpart 10
[38] Minnesota Statute 177.44, Subdivision 1
[39] Minnesota Statute 177.42, Subdivision 4
[40] Minnesota Rules 5200.1100
[41] Minnesota Statute 177.44, Subdivision 1
[42] 29 CFR Part 5.2(o) and Minnesota Statute 177.41
[43] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10
[44] Minnesota Statute 177.44, Subdivision 1

APPRENTICES, TRAINEES AND HELPERS

A. An apprentice is not subject to the state wage decision(s) incorporated into and found elsewhere in this contract, provided the contractor can demonstrate compliance with **Subparts (1 - 4)** of this section: [45]

1. The apprentice is performing the work of his/her trade.
2. The apprentice is registered with the U.S. DOL Bureau of Apprenticeship and Training or MN/DLI Division of Voluntary Apprenticeship.
3. The apprentice is compensated according to the rate specified in the program for the level of progress.
4. The ratio of apprentices to journeyman workers on the project is not greater than the ratio permitted for the contractor's entire work force under the registered program.[46]

B. If a contractor fails to demonstrate compliance with the terms established in **Subpart A (1 – 4)** of this section, the contractor shall compensate the worker not less than the applicable total prevailing wage rate for the actual work performed.[47]

C. A trainee and a helper are not exempt under state law; the contractor shall assign the trainee or helper a job classification that is the "same or most similar"[48] and compensate the trainee or helper for the actual work performed regardless of the trainee's or helper's skill level.

SUBCONTRACTING PART OF THIS CONTRACT[49]

A. If the prime contractor intends to sublet any portion of this contract, it shall complete and submit a **MNDOT, TP-21834, Request To Sublet Form** to the project engineer 10 days prior to the first day of work for any subcontractor.

B. The prime contractor shall not subcontract any portion of this contract without prior written consent from the project engineer.

C. The prime contractor's organization shall perform work amounting to not less than 40 percent of the total original contract cost. However, contracts with Disadvantaged Business Enterprise (DBE) or Targeted Group Business (TGB) established goals, or both, the contractor's organization shall perform work amounting to not less than 30 percent of the total original contract cost.

D. A first tier subcontractor shall not subcontract any portion of its work under this contract unless approved by the prime contractor and the project engineer. In addition, a first tier subcontractor may only subcontract up to 50% of its original subcontract.

E. A second tier subcontractor shall not subcontract any portion of its work under this contract.

F. Written consent to subcontract any portion of this contract does not relieve the prime contractor of liabilities and obligations under the contract and bonds.

G. Contractors shall not subcontract with or purchase materials or services from a debarred or suspended person.[50]

POSTER BOARDS

A. The prime contractor shall construct and display a poster board, which contains all required posters, is complete, accurate, legible and accessible to all workers from the first day of work.

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[45] Minnesota Rules 5200.1070
[46] MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director
[47] Minnesota Rules 5200.1070, Subpart 3
[48] Minnesota Statute 177.44, Subdivision 1
[49] MNDOT Standard Specifications for Construction, Section 1801
[50] Minnesota Statute 161.315, Subdivision 3(3)

until the project is 100 percent complete.[51] The prime contractor is not allowed to place a poster board at an off-site location.

B. The prime contractor can obtain the required posters by contacting MNDOT at (651) 366-3091. The prime contractor will need to furnish its name, mailing address, the type of posters (state-aid) and the quantity needed.

C. Refer to the poster board section of the Labor Compliance website to obtain applicable contact information for each poster. The link to the website can be found in **section III (SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT), Subpart G** of these provisions.

EMPLOYEE INTERVIEWS

At any time the prime contractor shall permit representatives from MN/DLI or the Department to interview its workers and those of any subcontractor during working hours on the project.[52]

TRUCKING / OFF-SITE FACILITIES

A. The prime contractor is responsible to ensure that its workers and those of all subcontractors, are compensated in accordance with the state wage determination(s) incorporated into and found elsewhere in this contract for the following work duties:

1. The processing or manufacturing of material, including the hauling of material to and from a prime contractor's material operation that is not a separate commercial establishment.[53]
2. The processing or manufacturing of material, including the hauling of material to and from an off-site material operation that is not considered a commercial establishment.[54]
3. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.[55]
4. The delivery of materials from a non-commercial establishment to the project and the return haul.[56]
5. The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.[57]
6. The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.[58]
7. The delivery of mineral aggregate materials from a commercial establishment, which is deposited "substantially in place" and the return haul, either empty or loaded.[59]

B. The work duties prescribed in **Subpart A (1 - 7)** of this section do not represent all possible hauling activities and/or other work duties that may be performed under this contract. It is the responsibility of the prime contractor to inform itself and all subcontractors about other applicable job duties that may be subject to the contract labor provisions. Refer to the Labor Compliance website for additional information regarding trucking regulations.

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[51] Minnesota Statute 177.44, Subdivision 5
[52] MNDOT Standard Specifications for Construction, Section 1511
[53] ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2
[54] Minnesota Rules 5200.1106, Subpart 3B(2)
[55] Minnesota Rules 5200.1106, Subpart 3B(1)
[56] Minnesota Rules 5200.1106, Subpart 3B(2)
[57] Minnesota Rules 5200.1106, Subpart 3B(3)
[58] Minnesota Rules 5200.1106, Subpart 3B(4)
[59] Minnesota Rules 5200.1106, Subpart 3B(5)(6)

C. A contractor acquiring trucking services from an ITO, MTO and/or Truck Broker to perform and/or provide "covered" hauling activities shall comply with the payment of the certified state truck rental rates, [60] which are incorporated into and found elsewhere in this contract.

D. Each month, in which hauling activities were performed under this contract, the prime contractor and all subcontractors shall submit a **MNDOT, TP-90550 - Month-End Trucking Report and MNDOT, TP-90551 - Statement of Compliance Form**, along with each ITOs, MTOs and/or Truck Brokers reports to the department.[61] The specifications regarding the dates for submission can be found near the bottom of the **MNDOT, TP-90551 - Statement of Compliance Form.**

E. A Truck Broker contracting to provide trucking services in the construction industry may charge a reasonable broker fee to the provider of trucking services.[62] The prime contractor and any subcontractor contracting to receive trucking services shall not assess a broker fee.

F. A contractor with employee truck drivers shall adhere to the requirements established in **Sections IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS).**

G. If after written notice, the prime contractor fails to submit its month-end trucking reports and certification forms and those of any subcontractor, MTO and/or Truck Broker, the department may take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT).**

CHILD LABOR

A. Except as permitted under **Subpart B** of this section, no worker under the age of 18 is allowed to perform work on construction projects.[63]

B. In accordance with state law, a worker under the age of 18, employed in a corporation totally owned by one or both parents that is supervised by the parent(s), may perform work on construction projects.[64] However, if this contractor is subject to the federal Fair Labor Standards Act, a worker under the age of 18 is not allowed to perform work in a hazardous occupation.[65]

C. To protect the interests of the department, the project engineer may remove a worker that appears to be under the age of 18 from the construction project until the contractor or worker can demonstrate proof of age [66] and compliance with all applicable federal and/or state regulations.[67]

NON-COMPLIANCE AND ENFORCEMENT

A. The prime contractor shall be liable for any unpaid wages to its workers or those of any subcontractor, ITO, MTO and/or Truck Broker.[68]

B. If it is determined that a contractor has violated the state prevailing wage law, or any portion of this contract, the department after written notice, may implement one or more of the following sanctions:

1. Withhold or cause to be withheld from the prime contractor such amounts in considerations or assessments against the prime contractor, whether arising from this contract or other contract with the department.[69]

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[60] Minnesota Rules 5200.1106, Subpart 1
[61] Minnesota Rules 5200.1106, Subpart 10
[62] Minnesota Rules 5200.1106, Subpart 7(C)
[63] Minnesota Rules 5200.0910, Subpart F
[64] Minnesota Rules 5200.0930, Subpart 4
[65] 29 CFR Part 570.2(a)(ii)
[66] Minnesota Statute 181A.06, Subdivision 4
[67] MNDOT Standard Specifications for Construction, Section 1701
[68] MNDOT Standard Specifications for Construction, Section 1801
[69] MNDOT Standard Specifications for Construction, Section 1906

2. The department may reject a bid from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.[70]
3. The department may take the prosecution of the work out of the hands of the prime contractor, place the contractor in default and terminate this contract for failure to demonstrate compliance with these provisions.[71]

C. Any contractor who violates the state prevailing wage law is guilty of a misdemeanor and may be fined not more than $300 or imprisoned not more than 90 days or both. Each day that the violation continues is a separate offense.[72]

D. All required documents and certification reports are legal documents; willful falsification of the documents may result in civil action and/or criminal prosecution [73] and may be grounds for debarment proceedings.[74]

[70] Minnesota Statute 161.32, Subdivision 1(d)

[71] MNDOT Standard Specifications for Construction, Section 1808

[72] Minnesota Statute 177.44, Subdivision 6

[73] Minnesota Statutes 16B, 161.315, Subdivision 2, 177.43,Subdivision 5 177.44, Subdivision 6, 609.63

[74] Minnesota Statute 161.315 and Minnesota Statute 609.63

NOTICE TO BIDDERS (PROMPT PAYMENT TO SUBCONTRACTORS)

Minnesota Statutes that require prompt payment to subcontractors:

471.425 Prompt payment of local government bills.

Subd. 1. Definitions. For the purposes of this section, the following terms have the meanings here given them.

(d) "Municipality" means any home rule charter or statutory city, county, town, school district, political subdivision or agency of local government. "Municipality" means the metropolitan council or any board or agency created under chapter 473.

Subd. 4a. Prompt payment to subcontractors.

Each contract of a municipality must require the prime contractor to pay any subcontractor within ten days of the prime contractor's receipt of payment from the municipality for undisputed services provided by the subcontractor. The contract must require the prime contractor to pay interest of 1-1/2 percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of $100 or more is $10. For an unpaid balance of less than $100, the prime contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

HIST: 1985 c 136 s 5; 1995 c 31 s 1

Department of Public Works
201 4th Street SE, Room 108
Rochester, MN 55904-3740
(507) 328-2400

PREVAILING WAGES FOR STATE FUNDED CONSTRUCTION

MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY PREVAILING WAGES FOR STATE FUNDED CONSTRUCTION PROJECTS

THIS NOTICE MUST BE POSTED ON THE JOBSITE IN A CONSPICUOUS PLACE

Construction Type: Highway and Heavy

Region Number: 06

Counties within region:

- DODGE-20
- FILLMORE-23
- FREEBORN-24
- GOODHUE-25
- HOUSTON-28
- MOWER-50
- OLMSTED-55
- RICE-66
- STEELE-74
- WABASHA-79
- WINONA-85

Effective: 2011-10-31 Revised: 2012-07-23

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate.

Violations should be reported to:

Department of Transportation
Office of Construction
Transportation Building MS650
John Ireland Blvd
St. Paul, MN 55155
(651) 366-4209

Refer questions concerning the prevailing wage rates to:

Department of Labor and Industry
Prevailing Wage Section
443 Lafayette Road N
St Paul, MN 55155

(651) 284-5091
DLI.PrevWage@state.mn.us

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
LABORERS (101 - 112) (SPECIAL CRAFTS 701 - 730)				
101 LABORER, COMMON (GENERAL LABOR WORK)	2011-10-31	23.66	14.13	37.79
	2012-05-01	23.66	14.38	38.04
102 LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2011-10-31	23.66	14.13	37.79
	2012-05-01	23.66	14.38	38.04
103 LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2011-10-31	14.00	0.00	14.00
104 FLAG PERSON	2011-10-31	23.66	14.13	37.79
	2012-05-01	23.66	14.38	38.04
105 WATCH PERSON	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
106 BLASTER	2011-10-31	26.41	14.38	40.79
	2011-10-31	26.66	14.13	40.79
	2012-05-01	26.66	14.38	41.04
107 PIPELAYER (WATER, SEWER AND GAS)	2011-10-31	25.66	14.13	39.79
	2012-05-01	25.66	14.38	40.04
108 TUNNEL MINER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
109 UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2011-10-31	24.36	14.13	38.49
	2012-05-01	24.36	14.38	38.74

110	SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES NOT APPLY TO THE WORK PERFORMED ON A PREVAILING WAGE PROJECT BY A LAND SURVEYOR WHO IS LICENSED PURSUANT TO MINNESOTA STATUTES, SECTIONS 326.02 TO 326.15.	2011-10-31	26.00	12.70	38.70
111	TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	2011-10-31	23.41	14.38	37.79
		2011-10-31	23.66	14.13	37.79
		2012-05-01	23.66	14.38	38.04
112	QUALITY CONTROL TESTER (FIELD AND COVERED OFF-SITE FACILITIES; TESTING OF AGGREGATE, ASPHALT, AND CONCRETE MATERIALS); LIMITED TO MN DOT HIGHWAY AND HEAVY CONSTRUCTION PROJECTS WHERE THE MN DOT HAS RETAINED QUALITY ASSURANCE PROFESSIONALS TO REVIEW AND INTERPRET THE RESULTS OF QUALITY CONTROL TESTERS. SERVICES PROVIDED BY THE CONTRACTOR.	2011-10-31	15.80	4.03	19.83
SPECIAL EQUIPMENT (201 - 204)					
201	ARTICULATED HAULER	2011-10-31	28.61	16.60	45.21
		2012-05-01	28.66	16.70	45.36
202	BOOM TRUCK	2011-10-31	28.61	16.60	45.21
		2012-05-01	28.66	16.70	45.36
203	LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2011-10-31	19.50	0.00	19.50
204	OFF-ROAD TRUCK	2011-10-31	28.61	16.60	45.21
		2012-05-01	28.66	16.70	45.36
HIGHWAY/HEAVY POWER EQUIPMENT OPERATOR					

GROUP 2	2011-10-31	29.36	16.60	45.96
	2012-05-01	29.41	16.70	46.11

302 HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)

303 CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)

304 ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB (HIGHWAY AND HEAVY ONLY)

305 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)

306 GRADER OR MOTOR PATROL

307 PILE DRIVING (HIGHWAY AND HEAVY ONLY)

308 TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)

GROUP 3	2011-10-31	28.91	16.60	45.51
	2012-05-01	28.96	16.70	45.66

309 ASPHALT BITUMINOUS STABILIZER PLANT

310 CABLEWAY

311 CONCRETE MIXER, STATIONARY PLANT (HIGHWAY AND HEAVY ONLY)

312 DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)

313 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)

314 DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER

315 FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)

316 LOCOMOTIVE CRANE OPERATOR

317 MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE

318 MECHANIC . WELDER ON POWER EQUIPMENT (HIGHWAY AND HEAVY ONLY)

319 TRACTOR . BOOM TYPE (HIGHWAY AND HEAVY ONLY)

320 TANDEM SCRAPER

321 TRUCK CRANE . CRAWLER CRANE (HIGHWAY AND HEAVY ONLY)

322 TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)

GROUP 4	2011-10-31	28.61	16.60	45.21
	2012-05-01	28.66	16.70	45.36

323 AIR TRACK ROCK DRILL

324 AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)

325 BACKFILLER OPERATOR

326 CONCRETE BATCH PLANT OPERATOR (HIGHWAY AND HEAVY ONLY)

327 BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER)

328 BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON)

329 BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS

330 CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS

331 CHIP HARVESTER AND TREE CUTTER

332 CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE

333 CONCRETE MIXER ON JOBSITE (HIGHWAY AND HEAVY ONLY)

334 CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)

335 CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT

336 CURB MACHINE

337 DIRECTIONAL BORING MACHINE

338 DOPE MACHINE (PIPELINE)

339 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL (HIGHWAY AND HEAVY ONLY)

340 DUAL TRACTOR

341 ELEVATING GRADER

342 FORK LIFT OR STRADDLE CARRIER (HIGHWAY AND HEAVY ONLY)

343 FORK LIFT OR LUMBER STACKER (HIGHWAY AND HEAVY ONLY)

344 FRONT END, SKID STEER OVER 1 TO 5 C YD

345 GPS REMOTE OPERATING OF EQUIPMENT

346 HOIST ENGINEER (POWER) (HIGHWAY AND HEAVY ONLY)

347 HYDRAULIC TREE PLANTER

348 LAUNCHER PERSON (TANKER PERSON OR PILOT LICENSE)

349 LOCOMOTIVE (HIGHWAY AND HEAVY ONLY)

350 MILLING, GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE

351 MULTIPLE MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES, GENERATORS, PUMPS (HIGHWAY AND HEAVY ONLY)

352 PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE

353 PICKUP SWEEPER, ONE CUBIC YARD AND OVER HOPPER CAPACITY(HIGHWAY AND HEAVY ONLY)

354 PIPELINE WRAPPING, CLEANING OR BENDING MACHINE

355 POWER PLANT ENGINEER, 100 KWH AND OVER (HIGHWAY AND HEAVY ONLY)

356 POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES

357 PUGMILL

358 PUMPCRETE (HIGHWAY AND HEAVY ONLY)

359 RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS (HIGHWAY AND HEAVY ONLY)

360 SCRAPER

361 SELF-PROPELLED SOIL STABILIZER

362 SLIP FORM (POWER DRIVEN) (PAVING)

363 TIE TAMPER AND BALLAST MACHINE

364 TRACTOR, BULLDOZER (HIGHWAY AND HEAVY ONLY)

365 TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING (HIGHWAY AND HEAVY ONLY)

366 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER (HIGHWAY AND HEAVY ONLY)

367 TUB GRINDER, MORBARK, OR SIMILAR TYPE

368 WELL POINT DISMANTLING OR INSTALLATION (HIGHWAY AND HEAVY ONLY)

GROUP 5	2011-10-31	26.04	16.60	42.64
	2012-05-01	26.09	16.70	42.79

369 AIR COMPRESSOR, 600 CFM OR OVER (HIGHWAY AND HEAVY ONLY)

370 BITUMINOUS ROLLER (UNDER EIGHT TONS)

371 CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED)

372 FORM TRENCH DIGGER (POWER)

373 FRONT END, SKID STEER UP TO 1C YD

374 GUNITE GUNALL (HIGHWAY AND HEAVY ONLY)

375 HYDRAULIC LOG SPLITTER

376 LOADER (BARBER GREENE OR SIMILAR TYPE)

377 POST HOLE DRIVING MACHINE/POST HOLE AUGER

378 POWER ACTUATED AUGER AND BORING MACHINE

379 POWER ACTUATED JACK

380 PUMP (HIGHWAY AND HEAVY ONLY)

381 SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR)

382 SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER

383 SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER

384 STUMP CHIPPER AND TREE CHIPPER

385 TREE FARMER (MACHINE)

GROUP 6	2011-10-31	25.17	16.60	41.77
	2012-05-01	25.22	16.70	41.92

387 CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER

388 CONVEYOR (HIGHWAY AND HEAVY ONLY)

389 DREDGE DECK HAND

390 FIRE PERSON OR TANK CAR HEATER (HIGHWAY AND HEAVY ONLY)

391 GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING)

392 GREASER (TRACTOR) (HIGHWAY AND HEAVY ONLY)

393 LEVER PERSON

394 OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT) (HIGHWAY AND HEAVY ONLY)

395 POWER SWEEPER

396 SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS

397 TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

TRUCK DRIVERS

GROUP 1	2011-10-31	24.80	13.15	37.95

601 MECHANIC . WELDER

602 TRACTOR TRAILER DRIVER

603 TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES)

GROUP 2	2011-10-31	24.35	13.65	38.00
	2012-05-01	24.75	13.65	38.40

604 FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK

GROUP 3	2011-10-31	24.25	13.65	37.90
	2012-05-01	24.65	13.65	38.30

605 BITUMINOUS DISTRIBUTOR DRIVER

606 BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION)

607 THREE AXLE UNITS

GROUP 4	2011-10-31	25.71	8.71	34.42

608 BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER)

609 DUMP PERSON

610 GREASER

611 PILOT CAR DRIVER

612 RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS

613 TWO AXLE UNIT

614 SLURRY OPERATOR

615 TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER)

616 TRACTOR OPERATOR, UNDER 50 H.P.

SPECIAL CRAFTS

701 HEATING AND FROST INSULATORS	2011-10-31	41.07	18.39	59.46
702 BOILERMAKERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
703 BRICKLAYERS	2011-10-31	31.66	17.38	49.04
	2011-10-31	31.66	17.38	49.04
704 CARPENTERS	2011-10-31	26.41	17.21	43.62
	2012-05-01	26.91	17.21	44.12
705 CARPET LAYERS (LINOLEUM)	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
706 CEMENT MASONS	2011-10-31	34.36	7.90	42.26
	2012-05-01	34.86	7.90	42.76
707 ELECTRICIANS	2011-10-31	31.08	15.59	46.67
708 ELEVATOR CONSTRUCTORS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
709 GLAZIERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			

710	LATHERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
711	GROUND PERSON	2011-10-31	17.61	9.06	26.67
712	IRONWORKERS	2011-10-31	34.05	20.37	54.42
713	LINEMAN	2011-10-31	33.64	14.51	48.15
714	MILLWRIGHT	2011-10-31	30.05	19.52	49.57
		2012-05-01	30.90	19.52	50.42
715	PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2011-10-31	26.29	13.42	39.71
		2012-05-01	26.79	13.42	40.21
716	PILEDRIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2011-10-31	26.36	17.26	43.62
		2012-05-01	26.86	17.26	44.12
717	PIPEFITTERS . STEAMFITTERS	2011-10-31	33.90	27.34	61.24
718	PLASTERERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
719	PLUMBERS	2011-10-31	35.51	15.25	50.76
		2011-12-01	35.51	15.50	51.01
720	ROOFER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
721	SHEET METAL WORKERS	2011-10-31	35.08	1.89	36.97
722	SPRINKLER FITTERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			

723	TERRAZZO WORKERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
724	TILE SETTERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
725	TILE FINISHERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
726	DRYWALL TAPER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
727	WIRING SYSTEM TECHNICIAN	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
728	WIRING SYSTEMS INSTALLER	2011-10-31	22.46	10.61	33.07
729	ASBESTOS ABATEMENT WORKER	2011-10-31	27.33	14.49	41.82
		2012-01-01	27.33	14.94	42.27
730	SIGN ERECTOR	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			

Department of Public Works
201 4th Street SE, Room 108
Rochester, MN 55904-3740
(507) 328-2400

DEPARTMENT OF LABOR AND INDUSTRY **May 1, 2012**

LABOR STANDARDS UNIT

NOTICE OF CERTIFICATION OF TRUCK RENTAL RATES

NOTICE OF CERTIFICATION OF TRUCK RENTAL RATES AND EFFECTIVE DATE PURSUANT TO MINNESOTA RULES, PART 5200.1105

On May 1, 2012, the Commissioner of the Department of Labor and Industry ("DLI") certified the minimum truck rental rates for highway projects in the state's ten highway and heavy construction areas for trucks and drivers operating "four or more axle units, straight body trucks," "three axle units," "tractor only" and "tractor trailers." The certification followed publication of the Notice of Determination of Truck Rental Rates in the State Register on March 12,2012, and the informal conference held pursuant to Minnesota Rules, part 5200.1105 on April 4, 2012.

According to Minnesota Rules, part 5200.1105, the purpose of the informal conference is for DLI to obtain further input regarding the, proposed rates before the rates are certified. Approximately 18 individuals attended the informal conference. Many of the attendees voiced strong concerns regarding the inadequacy of the proposed rates. Among the concerns raised was the fact that the proposed rates were based on 2010 costs, including the 2010 price of fuel. Speakers indicated that because of the dramatic increase in the price of diesel in recent months, the published rates were far below the operators' current costs. As stated by some attendees:

> **"This year, right now yesterday we were paying $4.10...I know when fuel went up that last time, a lot of us had to eat the cost because there was no way of recouping it."**
>
> Testimony of Colleen Donovan, Transcript of Informal Conference, pp. 13, 14.

Ms. Donavan provided DLI written information that her 2010 average cost for fuel was $2.99 per gallon.

> **"And, like the price of fuel; $4.25, $4.30. That's what it is down by my place, anyway."**
>
> Testimony of Bob Dornsbach~ Transcript of Informal Conference, p. 32.

Mr. Bob Donsbach provided DLI written information that in October 2010 his fuel cost was $3.15 per gallon,

In response to the informal conference Jim Lloyd provided written information that his 2010 fuel cost was close to $3.00 per gallon and "now is at $4.00 plus and it does not look like it is going to decrease.'"

After the informal conference, Tom Barnes provided written information that his fuel costs in March 2010 were $2.82 per gallon and that his fuel costs for March 2012 were $4.07 per gallon.

Following the informal conference, DLI staff obtained data from the United States Department of Energy "DOE") regarding the price Of diesel during 2010 as compared.fo current costs.[1] That data, available at www.eia.doe.gov, show that the average price of diesel during 2010 was $2.964 per gallon. The average price of diesel during January, February, and March 2012 was $3.862 per gallon. Consequently, the average price of diesel ,for the first three months of this year was 30.4% higher than the average cost of diesel during 2010.

The purpose of *Minnesota Rules*, part 5200.1105, as stated in its statement of Need and Reasonableness, is to "provide equitable compensation" to independent truck operators. The commissioner finds that in order to carry out the purpose of the rule, it is' appropriate to consider the concerns expressed at thy informal conference[2] and to use average 2012 diesel costs in computing and certifying 2012 truck rental rates. Specifically, the commission finds that the extreme disparity between 2010 and current fuel costs warrant this adjustment in order for truck operators to be equitably compensated.[3]

(Footnotes)

[1] U.S. Energy Information Administration Midwest No. 2 Retail Prices (Dollars per Gallon)

[2] The DLI has historically used input from the informal conferences to establish certified rates. For example, truck rental rates certified in 2009 varied from the proposed rates based on information gathered at the informal conference.

3 The commissioner notes that the Minnesota Department of Transportation incorporates a fuel adjustment clause in certain of its contracts to accommodate the fluctuating price of fuel. That clause generally provides, for the adjustment of contract payments when the cost of fuel increases or decreases by more than 15% from an indexed rate during the term of the contract. By using 2012 fuel costs in certifying 2012 truck rental rates, the commissioner is not intending, to adopt or establish a similar fuel adjustment mechanism. Rather, he is taking this action to effectuate the purpose of Part 5200.11 05 in light of the concerns raised at the informal ,conference and the dramatic increase in the price of diesel between 2010 and effective date of2012 truck rental rates.

Construction truck operating costs were initially determined by survey on a statewide basis and were the subject of further input by interested parties attending the informal conference pursuant to *Minnesota Rules,* part 5200.1105 on April 4, 2012 and further data on fuel prices from the DOE for 2010 and 2012. In light of the discussion above, fuel costs stated in the surveys were adjusted upward by 30.4% to determine statewide operating costs. As a result of this adjustment, the operating cost for "four axle units, straight body trucks" is determined to be $51.58 per hour; the operating cost for "three axle units" is determined to be $37.35 per hour; the operating cost for "tractor only" is determined to. be $41.43 per hour; and the operating cost for "tractor trailers" is determined to be $52.89 per hour.

Adding the prevailing wage for drivers of these four types of trucks from each of the State's ten highway and heavy construction areas to the operating costs, the minimum hourly truck rental rate for the four types of trucks in each area is certified to be as follows:

3 Axle Units

	Effective Date	607 Driver Rate	Operating Cost	Truck Rental Rate
Region 1	May 1, 2012	40.10	37.35	77.45
Region 2	May 1, 2012	33.76	37.35	71.11
Region 3	May 1, 2012	25.40	37.35	62.75
Region 4	May 1, 2012	33.76	37.35	71.11
Region 5	May 1, 2012	40.50	37.35	77.85
Region 6	May 1, 2012	38.30	37.35	75.65
Region 7	May 1, 2012	33.76	37.35	71.11
Region 8	May 1, 2012	33.76	37.35	71.11
Region 9	May 1, 2012	40.50	37.35	77.85
Region 10	May 1, 2012	13.22	37.35	50.57

4 or more Axle Units

	Effective Date	604 Driver Rate	Operating Cost	Truck Rental Rate
Region 1	May 1, 2012	40.20	51.58	91.78
Region 2	May 1, 2012	33.91	51.58	85.49
Region 3	May 1, 2012	24.71	51.58	76.29
Region 4	May 1, 2012	33.91	51.58	85.49
Region 5	May 1, 2012	26.34	51.58	77.92
Region 6	May 1, 2012	38.40	51.58	89.98
Region 7	May 1, 2012	20.87	51.58	72.45
Region 8	May 1, 2012	20.87	51.58	72.45
Region 9	May 1, 2012	40.60	51.58	92.18
Region 10	May 1, 2012	32.91	51.58	84.49

Official Notices

	Effective Date	Tractor 602 Driver Rate	Operating Cost	Tractor Only Truck Rental Rate	Plus Trailer Operating Cost	Tractor Trailor Rental Rate
Region 1	May 1, 2012	40.75	41.43	82.18	11.46	93.64
Region 2	May 1, 2012	34.42	41.43	75.85	11.46	87.31
Region 3	May 1, 2012	22.37	41.43	63.80	11.46	75.26
Region 4	May 1, 2012	34.42	41.43	75.85	11.46	87.31
Region 5	May 1, 2012	21.38	41.43	62.81	11.46	74.27
Region 6	May 1, 2012	37.95	41.43	79.38	11.46	90.84
Region 7	May 1, 2012	25.85	41.43	67.28	11.46	78.74
Region 8	May 1, 2012	34.42	41.43	75.85	11.46	87.31
Region 9	May 1, 2012	41.15	41.43	82.58	11.46	94.04
Region 10	May 1, 2012	33.42	41.43	74.85	11.46	86.31

The operating costs, including the average truck broker fees paid by those survey respondents who reported paying truck broker fees, and the truck rental rates may also be reviewed by accessing DLI's website at *www.dli.mn.gov*. Questions regarding the operational costs and truck rental rates can be answered by calling (651) 284-5091.

The minimum truck rental rates certified for these' four types of trucks in the state's ten highway and heavy construction areas will be effective for all highway and heavy construction projects financed in whole or part with state funds advertised for bid on or after May 1, 2012.

Dated: 1 May 2012

Ken B. Peterson, Commissioner
Department of Labor and Industry

DIVISION S

S - 1 DESCRIPTION

The Contract stipulations that follow are general in scope and may refer to conditions that will not be encountered on the work covered by the Contract. Any provision of these general requirements that pertains to a nonexistent condition or is not applicable to the work to be performed here under, or that conflicts with any provision of the Special Provisions or with any special instructions to bidders, shall have no meaning in the Contract and shall be disregarded.

S - 2 REFERENCE DOCUMENTATION

Reference Documentation shall be the latest edition, including amendments and published updates, issued prior to the date of advertisement for bids or the date of request for quotations, of the following:

1. Minnesota Department of Transportation (MnDOT) Standard Specifications for Construction.
2. City of Rochester Ordinances.
3. City of Rochester Standard Detail Plates.
4. City of Rochester Standard Specifications for Street & Utility Construction.

S - 3 DESIGNATION OF PARTIES

s 3.1 "City"

"City" shall mean the City of Rochester, 201 4th Street SE, Room 108, Rochester, MN 55904.

s 3.2 "Owner"

"Owner" shall mean the City of Rochester, 201 4th Street SE, Room 108, Rochester, MN 55904 or as named in the contract documents.

s 3.3 "Department"

"Department" shall mean the City of Rochester, 201 4th Street SE, Room 108, Rochester, MN 55904 or as named in the contract documents.

s 3.4 "Engineer"

"Engineer" shall mean the City Engineer or other authorized representative of the Owner as named in the contract documents.

s 3.5 "Inspector"

"Inspector" shall mean the Engineer's authorized representative assigned to make inspections of Contract performance.

s 3.6 "Bidder"

"Bidder" shall mean any individual or entity submitting a Proposal for the advertised work.

s 3.7 "Contractor"

"Contractor" shall mean the individual or entity designated in the Contract documents to construct the project pursuant to plans and specifications.

s 3.8 "Sub-Contractor"

"Sub-Contractor" shall mean the individual or entity acting for or on behalf of the Contractor in performing any part of the Contract.

s 3.9 "MnDOT"

"MnDOT" shall mean the Minnesota Department of Transportation.

Department of Public Works
201 4th Street SE, Room 108
Rochester, MN 55904-3740
(507) 328-2400

S - 4 DEFINITION OF TERMS

s 4.1 Amount of Contract

For the purpose of awarding the Contract and determining the amount of the Bond, the Contract amount shall be the total amount of the bid.

s 4.2 Date of Acceptance

Date of Acceptance shall be the day when final inspection reveals that the work has been completed in strict accordance with the provisions of the Plans and other Contract documents, and with previous inspection documents.

s 4.3 Date of Final Acceptance

Date of Final Acceptance shall be a day, at least two (2) years after the Date of Acceptance, at which time the City determines that the work continues to be in strict accordance with the provisions of the Plans and other Contract and inspection documents. The Date of Final Acceptance denotes the termination of Contractor's maintenance obligation.

s 4.4 Liquidated Damages

Liquidated damages are the amount prescribed in MnDOT Section 1807 to be paid to the Owner, or to be deducted from any payments due or to become due to the Contractor, for each day that work remains uncompleted after expiration of the Contract time as determined and extended in accordance with MnDOT Section 1806.

s 4.5 "Incidental"

Whenever in any section of the Contract documents, Plans or Specifications, any item, material or application is defined as incidental, Payment shall be incidental to the Contract and no direct compensation will be made.

s 4.6 "Or Approved Equal" Clause

Whenever in any section of the Contract documents, Plans or Specifications, any article, material or equipment is defined by describing a proprietary product, or by using the name of manufacturer or vendor, the term "or approved equal" if not inserted, shall be implied.

The specific article, material, or equipment mentioned shall be understood as indicating the type, function, minimum standard of design, efficiency, and quality required and shall not be construed in such a manner as to exclude manufactured products of comparable quality, design, and efficiency. The Engineer shall determine the acceptability of articles, materials, or equipment proposed "as equal".

s 4.7 Standard Documents

Standard Documents are those that are referred to but not included in the Plans, Specifications and Special Provisions. Standard Documents are available to the public and it is the Contractor's sole responsibility to obtain and understand the requirements of any Standard Documents noted in the Plans, Specifications and Special Provisions. Examples of Standard Documents include but are not limited to:

Bid documents (Advertisement, Information to Bidders, Proposal and Bid Security)

Performance and Payment Bond forms

Project Specifications and Special Provisions

City of Rochester, Minnesota, Department of Public Works documents:

Standard Specifications for Street and Utility Construction

Standard Detail Plates

Minnesota Department of Transportation documents:

Standard Specifications for Construction.

Standard Plates Manual.

ASTM Material Specifications.

S - 5 CONTRACT WORDING

Whenever in these Contract documents the words "As Ordered", "As Directed", "As Required", "As Permitted", "As Allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirement, permission, or allowance of the Owner and Engineer is intended.

Similarly the words "Approved", "Reasonable", "Suitable", "Acceptable", "Properly", "Satisfactory", or words of like effect and import, unless otherwise particularly specified therein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the Owner and Engineer.

S - 6 SECTION 01240 – VALUE ENGINEERING

Section 01240 –Value Engineering is hereby included in the attachments section of the proposal.

S - 7 AWARD AND EXECUTION OF CONTRACT

s 7.1 Payment and Performance Bonds

The successful Bidder, at the time of the execution of the Contract, shall furnish a Payment Bond equal to the Contract amount and a Performance Bond equal to the Contract amount, as required by Minn. Stat. Section 574.26. The bonds shall be issued by sureties satisfactory to the City and authorized to do business in the State of Minnesota.

The Payment Bond and Performance Bond shall guarantee that the Contractor will perform each and every part of the agreement, cover all guarantees called for in these Specifications, including the provisions for maintenance and repair, and insure the prompt payment to all persons furnishing material and labor required in the prosecution of the work. The Performance Bond shall be written in such a manner that it shall remain effective until the Date of Final Acceptance (two (2) years after the Date of Acceptance by the City, provided the work is in accordance with the Specifications and any inspection instructions, and all defects identified during the two (2) year period have been corrected).

In the event the Surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent, or its right to do business in Minnesota is terminated, or it otherwise ceases to meet the requirements set forth herein, the Contractor shall, within five days thereafter, substitute another Bond and Surety, both of which shall be subject to Owner's acceptance.

If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be the Contractor's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. Contractor shall furnish proof of such adjustment to the Owner.

s 7.2 Execution of Contract

The Contractor shall not, under any circumstance, assign the Contract or any payments due hereunder without written permission by the City.

The Contract will be made on the forms used by the City of Rochester, and made a part of the General Requirements and Covenants, copies of which are also on file at the office of the City Clerk, Room 135, City Hall, Rochester, Minnesota.

S - 8 CONTROL OF WORK

s 8.1 Drawing and Specification

The Specifications and Plans are intended to supplement, but not necessarily duplicate each other, and together constitute one complete set of Specifications and Plans so that any work exhibited in the one and not in the other, shall be executed as if it has been set forth in both, in order that the

work shall be completed according to the complete design or designs as decided and determined by the Engineer.

Should anything be omitted from the Specifications and Plans that is necessary to a clear understanding of the work, or should it appear various instructions are in conflict, the Contractor shall secure written instructions from the Engineer before proceeding with the construction affected by such omissions or discrepancies. It is understood and agreed that the work shall be performed and completed according to the true spirit, meaning, and intent of the Contract, Plans, and Specifications.

All Drawings, Specifications and copies thereof furnished by the City are its property. They are not to be used on other work and, with the exception of the signed Contract, plan sets are to be returned to the City upon request at the completion of the work.

Contractor shall keep and maintain one complete set of all drawings and specifications, addenda, approved shop drawings, change orders and other modifications at the job site that shall be available to the Engineer at all times.

s 8.2 Surveys, Staking and Monument Preservation

The Contractor shall give the Engineer at least 2 working days notice before requiring any stakes to be set or before commencing work on any portion of the Contract, or at any new place, as well as at any place where work has been relinquished or stopped for any reason.

Any work done without being properly located and established by base lines, offset stakes, bench marks, or other basic reference points located, established, or checked by the Engineer, may be ordered removed and replaced at the Contractor's cost and expense.

The Contractor shall carefully protect and preserve any permanent monuments or benchmarks that must of necessity be removed or disturbed in the construction of the work, until they can be properly referenced for relocation.

s 8.3 Other Contracts and Contractors

The Owner reserves the right to award contracts to other Contractors who do additional work at the site of this Project pursuant to MnDOT section 1505.

s 8.4 Testing of Completed Work

Before final acceptance, all parts of the work shall be tested and each part shall be in good condition and working order, or shall be placed in such condition and order at the expense of the Contractor. All tests of completed work required under this Contract shall be made under the direction of the Engineer or others so designated and at the expense of the Contractor, who shall repair at its own expense all damage resulting there from.

S - 9 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

s 9.1 Permits, Public Utilities and Code Requirements

The Contractor shall make the necessary arrangements for the use or installation of, and shall pay for, any and all utility service that may be necessary in conducting its work. The Contractor must obtain permission from the City of Rochester Water Department if it is necessary to use City water, and said use of water shall be under the City's direction and supervision. The use of existing private water services adjacent to the work shall be arranged and paid for by the Contractor.

If work is to be performed in State of Minnesota Right-Of-Way, the City shall apply for a "Utilities on Trunk Highway" Permit from the Minnesota Department of Transportation. The Contractor shall not initiate the work prior to receipt of the permit. All regulations and rules contained in this permit shall apply and will be considered a part of the Special Provisions. The Contractor shall furnish a certified check or surety bond in the amount required by and in favor of the State of Minnesota, Commissioner of Transportation.

If work is to be performed in Canadian Pacific Railroad right of way, the City shall apply for a "Utility crossings" License or Easements from the railroad company. The Contractor shall not initiate the work prior to receipt of the permit. All regulations and rules contained in this permit shall apply and will be considered a part of the Special Provisions. See also the attached Insurance Requirements for Canadian Pacific Railroad Protective Liability. This requirement shall be considered incidental to the project.

S - 10 MEASUREMENT & PAYMENT

s 10.1 Partial Payment

Unless the terms of the contract provide otherwise, progress payments shall be made monthly as the work progresses. Payments shall be based upon estimates of work completed as approved by the City. A progress payment shall not be considered acceptance or approval of any work or waiver of any defects therein.

The City may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. The City may reduce the amount of the retainage and may eliminate retainage on any monthly contract payment if, in the City's opinion, the work is progressing satisfactorily.

For further details refer to MnDOT specification 1906 "Partial Payments".

s 10.2 Acceptance and Final Payment

When final inspection reveals that the work has been completed in strict accordance with the provisions of the Plans, other Contract documents, and previous inspection instructions, the Engineer shall, within ninety (90) days thereafter, prepare a final estimate which shall be based on accurate measurements of all work performed, and shall submit such estimate together with recommendations to the City Council of the City of Rochester for approval. Payment shall then be made for all work performed under the Contract, less any partial payments already made and any legal deductions or forfeitures for the satisfaction of liens or other claims against the Contract.

s 10.3 Correction of Work After Final Payment

Neither acceptance and occupancy by the Owner, final payment, nor any other provision in the Contract documents, shall relieve the Contractor of its maintenance obligation as hereinafter set forth and as identified in the Specifications.

s 10.4 Maintenance and Repair

The Contractor shall guarantee all work relating to the Specifications for a period of at least two (2) years from the date of written acceptance of the work or project. The Contractor shall make all needed repairs arising out of defective workmanship or materials that, in the judgment of the City, become necessary during such period. Final acceptance and termination of the maintenance obligation shall occur on the date two (2) years after initial acceptance provided that the work is in accordance with the Specifications and any inspection instructions. The maintenance obligation shall otherwise continue until all defects, including defective equipment installed therein, have been corrected.

At any time prior to Final Acceptance (the time during which the maintenance obligation is in effect as provided herein) the City may demand that the Contractor make any noted repairs. If Contractor fails to undertake repairs within ten days after the mailing of a notice of the need to make such repairs, the City may either take action against the performance bond or make the repairs itself and recover the cost from Contractor or the surety under the performance bond.

S - 11 OWNER AND EASEMENTS

The City of Rochester is designated as the Owner. All work shall be located on public right-of-way or on easements to be provided by the Owner. The Contractor shall confine his operations at all times within the limits of the easements. Any repairs or restoration outside the easement limits, required due to the Contractor's carelessness, shall be made with no compensation allowed.

1. **If the Contractor obtains an agreement with a private land owner related to this project the City shall be provided a copy signed by the owner.**

S - 12 CONFLICTS IN DIMENSIONING

In case of conflict between dimensions shown on the plans or detail drawing and those in the specifications, the dimensions on the drawings shall govern. If the conflict is other than dimensions, the specifications shall govern.

S - 13 PRE-CONSTRUCTION CONFERENCE

A pre-construction conference will be scheduled after Engineer's receipt of the Contractor's schedule. The Contractor shall submit to the Engineer a schedule illustrating in bar chart form the anticipated commencement date and duration of each of the major work tasks prior to the pre-construction conference. These tasks shall be broken down by type of work and location as necessary for purposes of planning and coordinating the work of this contract. The schedule should address the phasing of construction in a manner that will provide good project coordination. The Contractor will be required to update or modify the written construction schedule as necessary to accurately reflect the rate and progress on the project.

The conference will be held with the Contractor, City Representative, Engineer and other parties involved in the project. Materials, material sources, construction methods, and scheduling will be reviewed and any questions or procedures will be clarified.

S - 14 CONTACT INFORMATION

Questions regarding this Project shall be directed to:

Russ Kelm
Design Engineer
City of Rochester
(507) 328-2417

S - 15 RESIDENT PREFERENCE IN PUBLIC CONTRACTS

The provisions of MnDOT 1302 are modified to the extent that, in accordance with Minnesota Statutes, section 16.365 (1982) as amended by Minn. Laws 1984, Chapter 440, Section 2, (Resident Preference in Public Contracts), this Contract will be awarded to the lowest responsible bidder, with resident bidders allowed a preference as against a non-resident bidder from a state which gives or requires a preference to bidders from that state, the preference shall be equal to the preferences given or required by the state of the non-resident bidder.

S - 16 (1213) DISQUALIFICATION OF BIDDERS

The provisions of MnDOT 1213 are hereby deleted and replaced with the following:

s 16.1 Either of the following reasons may be considered sufficient cause for disqualification of a bidder and the rejection of his Proposals:

(1) More than one Proposal for the same work from an individual, firm, or corporation under the same or different name. Substitute bid schedules shall be governed by MnDOT 1206.

(2) Evidence of collusion among bidders. Participants in collusion will receive no recognition as bidders on future work until they have been reinstated as responsible bidders.

S - 17 (1302) AWARD OF CONTRACT RESIDENT PREFERENCE IN PUBLIC CONTRACTS

The provisions of MnDOT 1302 are modified to the extent that, in accordance with Minnesota Statutes, section 16.365 (1982) as amended by Minn. Laws 1984, Chapter 440, Section 2, (Resident Preference in Public Contracts), this Contract will be awarded to the lowest responsible bidder, with resident bidders allowed a preference as against a non-resident bidder from a state which gives or requires a preference to bidders from that state, the preference shall be equal to the preferences given or required by the state of the non-resident bidder.

The City shall have up to **60 days** from the bid opening to award the contract during which time the bid unit prices shall prevail.

S - 18 (1305) REQUIREMENT OF CONTRACT BOND

The provisions of MnDOT 1305 are hereby deleted and replaced with the following:

The successful bidder shall furnish a payment bond equal to the contract amount and a performance bond equal to the contract amount as required by Minnesota Statutes, section 574.26. The surety and form of the bonds shall be subject to the approval of the contracting authority.

The contracting authority shall require for all contracts less than or equal to five million dollars ($5,000,000.00), that the aggregate liability of the payment and performance bonds shall be twice the amount of the contract. All contracts in excess of five million dollars ($5,000,000.00) shall have an aggregate liability equal to the amount of the contract.

S - 19 (1404) MAINTENANCE OF TRAFFIC, (1707) PUBLIC SAFETY, AND (2563) TRAFFIC CONTROL

The provisions of 1404 are supplemented as follows:

s 19.1 Traffic Control

The Contractor shall furnish, install, maintain, and remove all traffic control devices required to provide safe movement of vehicular and/or pedestrian traffic passing through the work zone during the life of the Contract from the start of Contract operations to the final completion thereof. The Engineer will have the right to modify the requirements for traffic control as deemed necessary due to existing field conditions.

Traffic control devices include, but are not limited to, barricades, warning signs, trailers, flashers, cones, drums, pavement markings and flaggers as required and sufficient barricade weights to maintain barricade stability.

The Contractor shall furnish names, addresses, and phone numbers of at least three (3) individuals responsible for the placement and maintenance of traffic control devices. At least one of these individuals shall be "on call" 24 hours per day, seven days per week during the times any traffic control devices, furnished and installed by the Contractor, are in place. The required information shall be submitted to the Engineer at the Pre-construction Conference. The Contractor shall also furnish the names, addresses, and phone numbers of those individuals to the following:

1.	Rochester Public Works Department	(507) 328-2400
2.	Rochester Police Department	(507) 328-2800
3.	Local Fire Department	(507) 328-6300
4.	City/Township Clerk	(507) 328-2900

The Contractor shall, at the pre-construction conference, designate a Work Zone Safety Coordinator who shall be responsible for safety and traffic control management in the Project work zone. The Work Zone Safety Coordinator shall be either an employee of the Contractor such as a superintendent or a foreman, or an employee of a firm which has a subcontract for overall work zone safety and traffic control management for the Project. The responsibilities of the Work Zone Safety Coordinator shall include, but not be limited to:

- Coordinating all work zone traffic control operations of the Project, including those of the Contractor, subcontractors and suppliers.
- Establishing contact with local school district, government, law enforcement, and emergency response agencies affected by construction before work begins.
- Maintaining a record of all known crashes within a work zone. This record should include all available information, such as: time of day, probable cause, location, pictures, sketches, weather conditions, interferences to traffic, etc. These records shall be made available to the Engineer upon request.

The Contractor shall inspect, on a daily basis, all traffic control devices, which the Contractor has furnished and installed, and verify that the devices are placed in accordance with the Traffic Control Layouts, these Special Provisions, and/or the MN MUTCD. Any discrepancy between the placement and the required placement shall be immediately corrected. The person performing the inspection shall be required to make a daily log. This log shall also include the date and time any changes in the stages, phases, or portions thereof go into effect. The log shall identify the location and verify that the devices are placed as directed or corrected in accordance with the Plan. All entries in the log shall include the date and time of the entry and be signed by the person making the inspection. The Engineer reserves the right to request copies of the logs as he deems necessary.

s 19.2 Maintenance and Staging of Traffic Control:

The Contractor is hereby advised that the phasing, construction staging, the work sequencing, and the maintenance of pedestrian and vehicular traffic control and related signage are critical on this project. The Contractor shall fully expect to employ significant measures to control and maintain pedestrian, vehicular traffic throughout the life of the project. The major phases of construction are as follows:

Construction and Traffic Control Phases

ADVANCE SIGNING SHALL BE INSTALLED 7 DAYS BEFORE CONSTRUCTION IS TO BEGIN as approximately located in the plan and as approved by the Engineer. The Contractor shall notify the Engineer at least five (5) working days in advance of his intent to close lanes.

10th Ave SE

The project area shall be closed to thru traffic during the project. Access to abutting owners shall be maintained at all times.

Prior to the start of the work, the contractor shall submit detailed traffic control plans for approval by the engineer. The Traffic Control Plan shall present the traffic control devices and layouts required for each stage of work. The plan shall also indicate maintenance and routing of pedestrian traffic throughout the project corridor.

At all times throughout this project, the Contractor shall keep all directly affected property owners informed as to the appropriate access route being provided and maintained for them.

A traffic flow pattern on city streets shall be maintained to provide emergency vehicle access to all property. Fire hydrants, on or adjacent to the work, shall be kept accessible to firefighting equipment at all times. All street closings shall be approved by the city prior to closing. The temporary closing of any streets will require the installation of sufficient barricades, fences, and signs, to adequately deter traffic from entering the sites. If the streets are not closed, one lane of traffic shall be maintained at all times, and signs installed indicating "local traffic only".

Haul routes shall generally be along C.S.A.H. streets or trunk highways, and coordinated with the engineer.

s 19.3 Measurement and Payment

No measurement will be made of the various Items that constitute Traffic Control but all such work will be construed to be included in the single Lump Sum payment under Item 2563.601 (Traffic Control)

Item No.	Item	Unit
2563.601	TRAFFIC CONTROL	L S

S - 20 (1506) SUPERVISION BY CONTRACTOR

The provisions of MnDOT 1506 are supplemented as follows:

At the Preconstruction Conference the Contractor shall designate in writing who the competent superintendent and competent individual (if different) will be for this Project. These persons can only be changed throughout the duration of the Project by submission of written authorization to the Engineer by the Contractor. The submittal of these persons shall be done before any work is performed on this Project.

The Contractor will be subject to an hourly charge for failure to comply with the requirements of MnDOT 1506. Non-Compliance charges, for each incident, will be **assessed at a rate of $100 per hour**, for each hour or portion thereof, during which the Engineer determines that the Contractor has not complied. No charge will be made if the deficiency is corrected within one (1) hour of notification.

An incident of Non-Compliance will be defined as the receipt of a written work order by the Contractor with instructions to correct a deficiency.

S - 21 (1507) UTILITY PROPERTY AND SERVICE

Construction operations in the proximity of utility properties shall be performed in accordance with the provisions of MnDOT 1507, except as modified below:

s 21.1 The provisions of MnDOT 1507.1 B are hereby deleted and the following substituted therefore:

B Gopher State One Call

The Contractor shall:

(1) Mark the proposed excavation in accordance with the Minnesota State Statute 216D color code before contacting "Gopher State One Call." The Contractor shall mark proposed excavation area with white paint and white flags or in lieu of white flags, white stakes may be used. The Contractor must adhere to all requirements of Gopher State One Call in addition to the following:

The white markings must delineate the **actual excavation area** where the locating of underground facilities is required. All flags and stakes shall display the name, and phone number of the Contractor. All areas of proposed excavation shall be considered "practical" for the use of white markings, pursuant to Minnesota Statutes §216D.05 (2).

(2) Call "Gopher State One Call" at least 48 hours (excluding Saturdays, Sundays, and holidays) before starting excavation operations.

(3) The Contractor shall acquire a Positive Response confirmation from MnDOT for all proposed excavations when the Gopher State One Call has indicated MnDOT utilities may be affected. The Contractor may call MnDOT Electrical Services Section (ESS) Dispatch Locating to confirm the status of Utility infrastructure owned by MnDOT. MnDOT Electrical Services Section (ESS) Dispatch Locating can be contacted at the following phone numbers; (651) 366 -5750 or (651) 366-5751. The Contractor shall be responsible for all damage to MnDOT owned Utility infrastructure if a Positive Response confirmation has not been acquired from MnDOT. The Contractor is required to comply with the provisions of Minnesota Statutes chapter 216D when performing Excavation as defined in Minnesota Statutes §216D.01 (subdivision 5), and will be responsible for damages to facilities in accordance with Minnesota Statutes §216D.06.

s 21.2 All utilities that relate to this Project are classified as "Level D," unless the Plans specifically state otherwise. This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of existing subsurface utility data."

s 21.3 By bidding on this Contract, the bidder agrees that it shall use the Plan to identify the location of MnDOT drainage facilities as satisfying the requirements of Minnesota Statutes Ch. 216D and Minnesota Rules 7560.0250 with respect to MnDOT's storm water drainage facilities.

s 21.4 The following utility owners have existing facilities that may be affected by the work under this Contract, all of which they intend where necessary to relocate or adjust in advance of or concurrently with the Contractor's operations.

Full Name	Company	Description	Business Phone
Steve Hyke	MN Energy Resources	Gas - Yellow	(507) 529-5104
Ron Muller	Charter Communications	Cable-Orange	(507) 285-6164
Wally Carlson	Mayo Clinic Facilities	Other	(507) 266-8142
Kay Klemmer	Northern Natural Gas	Gas - Yellow	(507) 451-7760 3202
Pat Lynch	Zayo Bandwidth	Fiber Optics - Orange	(952) 230-4288
Rick Wellik	Peoples Cooperative Power	Communications - Orange	(507) 288-4004
Doug Feine	Public Works OWEF	Steam - Yellow	(507) 328-7033
Chad O'Connor	Centurylink	Telephone - Orange	(507) 285-2059
Donn Richardson	Rochester Public Utilities	Water Dept - Blue	(507) 280-1509
Mike Engle	Rochester Public Utilities	Electric - Red	(507) 280-1579
Steve Cook	Rochester Public Utilities	Electric - Transmission	(507) 280-1590
Eric Loftus	Rochester Public Works	Sewer - Green	(507) 328-2437

s 21.5 Utilities

Minnesota Energy Resources Corporation gas lines.

Will be relocating the 2 gas lines that run north south on 10th Ave SE. These lines are within the culvert limits.

s 21.6 The Contractor shall coordinate his/her work and cooperate with the foregoing utility owners and their forces in a manner consistent with the provisions of MnDOT 1507 and the applicable provisions of MnDOT 1505.

s 21.7 The City of Rochester utilities that are affected such as storm sewer, sanitary sewer, and water supply have been included in the Plan for adjustment or relocation. The Contractor shall notify Doug Nelson, Manager of Engineering at telephone (507) 328-2423, in advance of the date he intends to start work and he shall furnish that office with such information as may be necessary to permit the responsible authorities to make suitable arrangements relative thereto.

s 21.8 The Contractor shall verify all underground utility locations and elevations prior to construction. (Gopher State One Call 1-800-252-1166)

S - 22 (1710) TRAFFIC CONTROL DEVICES

All traffic control devices and methods shall conform to the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), Minnesota Standard Signs Manual, the Traffic Engineering Manual, and the following:

In accordance with the MN MUTCD all sign supports shall be crashworthy. Signs installed on barricades, barricade sign combinations, and all other portable supports shall be crashworthy. This includes all new and used Category I and Category II devices.

The Contractor shall provide the Project Engineer a Letter of Compliance stating that all of the Contractors Category I and II Devices are NCHRP 350 approved as of July 1, 2006. The Letter of Compliance

must also include approved drawings of the different signs and devices and shall be provided to the Project Engineer at the Pre-construction meeting.

S - 23 (1717) AIR, LAND AND WATER POLLUTION

The provisions of MnDOT 1717 are supplemented and/or modified with the following:

s 23.1 **Discovery Of Contaminated Materials And Regulated Wastes**.

If during the course of the Project, the Contractor unexpectedly encounters any of the following conditions indicating the possible presence of contaminated soil, contaminated water, or regulated waste, the Contractor shall immediately stop work in the vicinity, notify the Engineer, and request suspension of work in the vicinity of the discovery area, in accordance with MnDOT 1803.4.

A documented inspection and evaluation will be conducted prior to the resumption of work. The Contractor shall not resume work in the suspected area without authorization by the Engineer.

(A) Indicators of contaminated soil, ground water or surface water include, but are not limited to the following:

(1) Odor including gasoline, diesel, creosote (odor of railroad ties), mothballs, or other chemical odor.
(2) Soil stained green or black (but not because of organic content), or with a dark, oily appearance, or any unusual soil color or texture.
(3) A rainbow color (sheen) on surface water or soil.

(B) Indicators of regulated wastes include, but are not limited to the following:

(1) Cans, bottles, glass, scrap metal, wood (indicators of solid waste and a possible dump)
(2) Concrete and asphalt rubble (indicators of demolition waste).
(3) Roofing materials, shingles, siding, vermiculite, floor tiles, transite or any fibrous material (indicators of demolition waste that could contain asbestos, lead or other chemicals).
(4) Culverts or other pipes with tar-like coating, insulation or transite (indicators of asbestos).
(5) Ash (ash from burning of regulated materials may contain lead, asbestos or other chemicals).
(6) Sandblast residue (could contain lead).
(7) Treated wood including, but not limited to products referred to as green treat, brown treat and creosote (treated wood disposal is regulated).
(8) Chemical containers such as storage tanks, drums, filters and other containers (possible sources of chemical contaminants).
(9) Old basements with intact floor tiles or insulation (could contain asbestos), sumps (could contain chemical waste), waste traps (could contain oily wastes) and cesspools (could contain chemical or oily wastes).

s 23.2 MnDOT 1717.2 A2 is hereby deleted and replaced with the following:

A2 During Construction

The Contractor shall implement the Project's Storm Water Pollution Prevention Plan. The Contractor shall schedule and install temporary and permanent sediment and erosion control measures, construct ponds and drainage facilities, finish earth work operations, place topsoil, establish turf, and conduct other Contract work in a timely manner to minimize erosion and sedimentation.

All exposed soil areas with continuous positive slopes that are within 60 m **(200 feet)** of a public water shall have temporary or permanent erosion protection within 24 hours after the construction activity in that portion of the site has temporarily or permanently ceased and connection is established to the public water. All other positive slopes to constructed surface waters, such as permanent storm water treatment ponds, curb and gutter systems, storm

sewer inlets, temporary or permanent drainage ditches, or other storm water conveyance systems, shall have temporary erosion protection or permanent cover for the exposed soil areas as soon as practicable but no later than 14 days after construction activity has temporarily or permanently ceased in that area. For those drainage areas that have a discharge point within 1 mile and flows to an impaired or Special Waters shall have temporary erosion protection or permanent cover for the exposed soil areas as soon as practicable but no later than 7 days after construction activity has temporarily or permanently ceased in that area. Impaired and Special Waters are defined as those listed and referenced in the NPDES Permit.

Positive slopes adjacent to public waters and wetlands will be stabilized at the close of each day when weather forecasts for rain that evening, and/or overnight including weekends. Once work is completed it will be stabilized permanently as soon as practical but no later than seven days.

Exposed soil areas do not include; stockpiles or surcharge areas of sand, gravel, aggregate, concrete, bituminous, or road bed and surfacing material. A perimeter sediment barrier may be necessary to minimize loss when these are within the 60 m (200 feet) of existing surface waters or the property edge.

The bottom of temporary or permanent drainage ditches or swales constructed to drain water from a construction site must be stabilized with erosion control measures for the last 60 m **(200 feet)**, or more when conditions warrant, from the property edge or from the point of discharge to any existing surface water. Stabilization shall be completed within 24 hours after the construction activity in that portion of the ditch has temporarily or permanently ceased. Ditch stabilization will continue concurrently with construction activities but no later than 14 days after construction activities have permanently or temporarily ceased. Any, culvert pipe or storm sewer pipe that is within the cumulative distance is not part of this distance. Ditch checks may be provided where necessary to slow water flow and capture sediment.

Temporary or permanent ditches used as treatment systems will not need to be stabilized but must provide the proper Best Management Practices for the treatment system.

Pipe outlets shall be provided with temporary or permanent energy dissipation within 24 hours of connecting the pipe to any constructed or existing surface waters.

The Contractor shall limit the surface area of erodible soil that can be exposed to possible erosion at any one time when the permanent erosion control features are not completed and operative.

All liquid and solid wastes generated by concrete washout operations must be contained and not have the opportunity to come in contact with the surface waters or ground water. This includes the ditches, slopes to ditches, curb and gutter/storm sewer systems, and ponds. Areas where there are sandy soils, karsts, and high ground water the washout facility must have an impermeable liner. Liquid and solid wastes must be disposed of properly. A concrete washout sign must be installed adjacent to each washout facility to notify personnel.

s 23.3 MnDOT 1717.2E is hereby deleted and replaced with the following:

E Site Plans

The Engineer may require the Contractor to submit a site plan, in writing, detailing proposed erosion control and sediment control measures and a schedule indicating starting and completion times for construction operations working in water bodies and/or in direct proximity to waters of the state.

Contractor shall not start work in the affected areas until the schedule and site plan have been accepted by the Engineer and all materials and equipment for the activity are on site.

F Compensation

The borings indicate that regulated wastes (i.e. construction debris, brick, concrete block, etc) will be encountered when trenching in 2nd Avenue SW. If the material encountered is unsuitable for trench backfill, then the Contractor shall haul and dispose of the material at an approved demolition landfill site. Contractor shall be compensated on a cubic yard loose volume basis (truck measure) for the removal and disposal of said material.

Contractor shall also be compensated on a cubic yard loose volume basis for granular material for backfill for the quantity of debris hauled from the site. The quantity of granular backfill shall be based on the quantity of debris hauled from the site and disposed of at an approved demolition landfill.

S - 24 (1717) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

Pollution of natural resources of air, land and water by operations under this Contract shall be prevented, controlled, and abated in accordance with the rules, regulations, and standards adopted and established by the Minnesota Pollution Control Agency (M.P.C.A.), and in accordance with the provisions of MnDOT 1717, 1803.5 and the following:

This project will disturb less than 1 acre, therefore no permit is required, however Best Management Practices shall be maintained to prevent erosion and sediment.

S - 25 (1803) PROSECUTION OF WORK

The provisions of MnDOT 1803 are supplemented and/or modified with the following:

s 25.1 The Contractor will be subject to an hourly charge for failure to furnish, install and/or maintain the proper Portable Concrete Barrier attenuation required on this Project. Non-compliance charges, for each incident, will be **assessed at a rate of $250.00 per hour**, for each or any portion thereof, which the Engineer determines that the Contractor has not complied.

S - 26 (1806) DETERMINATION OF CONTRACT TIME

The contract time will be determined in accordance with the provisions of 1806 and the following:

s 26.1 Construction operations shall be started within eight (8) Calendar Days after the date of Notice of Contract Approval, whichever is later. Construction operations shall not commence prior to Contract Approval.

s 26.2 All work required by these contract documents shall be initiated after **April 1, 2013** completed no later than **June 15, 2013**.

S - 27 INCIDENTAL WORK

Items of work for which no pay items are included in the bid proposal shall be considered as incidental expense and no separate payment will be made therefore. Incidental items include, but are not limited to the following:

Erosion Control Supervisor

Abandon and plugging existing lines and structures, other than paid for in the plans

Disposal of excess excavation.

Erosion Control BMP's:

- Concrete Washout Operations
- Street Sweeping

Pipe bedding/foundation/encasement material, other than paid for in the plans

Maintaining access to private property.

Trench Excavation

Bituminous Tack Coat.

Finish grading of boulevard and disturbed areas

Fine grading of subgrade and subgrade preparation

Preparation of aggregate base for paving

Shaping of earth berms for erosion control and drainage swales

Water & Dewatering

S - 28 (1904) EXTRA AND FORCE ACCOUNT WORK

The provisions of MnDOT 1904 are supplemented and/or modified with the following:

s 28.1 The Contractor is required to submit force account work itemized statements of costs in accordance with MnDOT 1904 to the Engineer on MnDOT form TP-21659 (Summary of Daily Force Account). Copies of this form can be obtained from the Engineer.

s 28.2 The following sentence shall be added to the second paragraph of MnDOT 1904:

"Under no circumstance will the negotiated unit price for Extra Work which is performed by a subContractor include a Prime Contractor allowance which exceeds that provided for in 1904(4), Paragraph 3."

S - 29 (1910) FUEL ESCALATION CLAUSE

The provisions of MnDOT 1910 are hereby deleted and replaced with the attached Fuel Escalation Clause.

S - 30 (2021) MOBILIZATION

The provisions of MnDOT 2021 are hereby deleted and replaced with the following:

s 30.1 DESCRIPTION

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the Project site; for the establishment of all Contractor's offices and buildings or other facilities necessary for work on the Project. Mobilization may include bonding, permit, and demobilization costs. When the proposal does not have a lump sum item for Mobilization, all costs incurred by the Contractor for Mobilization shall be incidental to other work.

s 30.2 BASIS OF PAYMENT

Based on the lump sum Contract price for mobilization, partial payments will be made as follows:

Mobilization Partial Payments		
	Pay Lesser of the Two	
% of Original Contract Amount Completed[1]	% of Mobilization	% of Original Contract Amount
5	50	3
15	75	5
25	100	5
95	100	N/A

[1] The Percent of Original Contract Amount Completed = the amount earned by the Contractor, excluding money earned for mobilization and material on hand, divided by the total value of the original contract (all bid items).

The total sum of all payments shall not exceed the original Contract amount bid for the mobilization item, regardless of the fact that the Contractor may have, for any reason, shut down work on the Project or moved equipment away from the Project and then back again.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

Item No.	Item	Unit
2021.501	MOBILIZATION	LS

S - 31 (2101) CLEARING AND GRUBBING

Clearing and grubbing operations shall be performed in accordance with the provisions of MnDOT 2101 and the following:

s 31.1 Burning or burying timber, stumps, roots or other debris will not be permitted.

s 31.2 The first paragraph of MnDOT 2101.3D Disposal Limitations, is revised to read as follows:

> The Contractor shall dispose of trees, brush, stumps, roots, and other debris or byproducts by chipping, marketing, ~~or burning~~. The Contractor:

s 31.3 MnDOT 2101.3D(5) under Disposal Limitations, is revised to read as follows:

> (5) Shall not bury trees, brush, stumps, roots, and other debris or by-products within the State Right of Way or City Property.

s 31.4 MnDOT 2101.3D6 Burying, is hereby deleted in its entirety.

s 31.5 The first paragraph of MnDOT 2101.4B Area Basis, is revised to read as follows:

> When the hectare is the unit, quantities will be determined by measuring (to the nearest 0.02 hectare **(0.05 acre)**) all areas cleared and all areas grubbed, within the limits shown in the Plans or staked by the Engineer. All measurements will be made horizontally to points 3 m **(10 feet)** outside the trunks of qualifying trees or stumps on the perimeter of the area being measured. Separate areas smaller than 0.02 hectare **(0.05 acre)** will be considered to be 0.02 hectare **(0.05 acre)**.

s 31.6 The first paragraph of MnDOT 2101.5 Basis of Payment, is revised to read as follows:

> Payment for the accepted quantities of clearing and grubbing at the Contract prices per unit of measure will be full compensation for all removal and disposal costs, including the costs of securing outside disposal sites as needed and of carrying out the specified treatment in disposing of elm, oak wilt infected red oaks, pine, and marketable trees.

Item No.	Item	Unit
2101.511	CLEARING AND GRUBBING	LS

S - 32 (2104) REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES

Section 2104 is hereby supplemented to include the following:

The Owner shall have the option of removing and salvaging all items such as fences, gates, light standards, poles, etc. If the Owner does not remove such items prior to construction, they shall be removed by the Contractor and shall be considered incidental to the Contract unless specific bid items are included.

All debris and excess materials removed from the project shall be disposed of by the Contractor off the project site. No burying of debris will be permitted.

Sewers within the trenching limits shall be removed and sewers outside of the trench limits shall be plugged all as incidental expense.

Abandoning of existing storm sewers shall be filled with granular material and capped watertight. Filling and capping of the abandoned sewer pipe shall be considered incidental work for which no direct payment will be made.

s 32.1 **Item 2104.501 "Remove Stone Masonry Wall"** Shall include the removal of existing grouted limestone wall as noted on the plans. Measurement and payment shall be made at the contract unit price per linear foot, which shall be compensation in full for all labor, equipment, and materials necessary to remove and dispose of the masonry and stones.

s 32.2 **Item 2104.501 W200.564 "Remove Watermain"** Shall include the removal of existing watermain as noted on the plans, temporary closing or maintaining flows shall be coordinated with the water department. Measurement and payment shall be made at the contract unit price per linear foot, which shall be compensation in full for all labor, equipment, and materials necessary to complete the work

s 32.3 **Item 2104.501 "Remove Sewer ..."** If no pay item is included then it is incidental to the project otherwise, shall include the removal of existing pipe, apron, or structure, by type, as noted on the plans. Measurement and payment shall be made at the contract unit price per linear foot or each, which shall be compensation in full for all labor, equipment, and materials necessary to remove and dispose of the work and shall include capping or plugging remaining abandoned pipe if any.

s 32.4 **Item 2104.501 "Remove Concrete Box Culvert ..."** If no pay item is included then it is incidental to the project otherwise, shall include the removal of existing poured in place concrete culvert, as noted on the plans. Measurement and payment shall be made at the contract unit price per linear foot or each, which shall be compensation in full for all labor, equipment, and materials necessary to remove and dispose of the work and shall include capping or plugging remaining abandoned pipe if any.

s 32.5 **Item 2104.503-5 "Remove Concrete Pavement, Drive, and Sidewalk"** Shall include the removal of existing concrete pavements as noted on the plans. Measurement and payment shall be made based on surface area and shall be compensation for the total depth of the concrete pavements at the contract unit price per square yard, which shall be compensation in full for all labor, equipment, and materials necessary to remove and dispose of the concrete pavements.

s 32.6 **Item 2104.505 "Remove Bituminous Pavement"** Shall include the removal of existing bituminous pavement as noted on the plans. Measurement and payment shall be made based on surface area and shall be compensation for the total depth of the bituminous pavement at the contract unit price per square yard, which shall be compensation in full for all labor, equipment, and materials necessary to remove and dispose of the bituminous pavement.

s 32.7 **Item 2104.511/2521.603 "Sawing Concrete Pavement"** If no pay item is included then it is incidental to the project otherwise, shall include saw cutting of concrete paving along the removal line. Measurement and payment shall be made at the contract unit price per linear foot, which shall be compensation in full for all labor, equipment, and materials necessary to saw cut to provide a clean edge.

s 32.8 **Item 2104.513 "Sawing Bituminous Pavement"** If no pay item is included then it is incidental to the project otherwise, shall include saw cutting of bituminous paving along the removal line. Measurement and payment shall be made at the contract unit price per linear foot, which shall be compensation in full for all labor, equipment, and materials necessary to saw cut to provide a clean edge.

s 32.9 **Item 2104.509 "Remove Gabion"** Shall include the removal of the existing gabions as noted on the plans. Measurement and payment shall be made at the contract unit price per each, which shall be compensation in full for all labor, equipment, and materials necessary to maintain service flow, plug, remove and dispose the entire headwall and rail.

s 32.10 **Item 2104.509 "Remove Concrete Headwall"** Shall include the removal of the existing poured in place concrete headwall and metal railing, as noted on the plans. Measurement and payment shall be made at the

contract unit price per each, which shall be compensation in full for all labor, equipment, and materials necessary to maintain service flow, plug, remove and dispose the entire structure.

s 32.11 **Item 2104.509 "Remove Manhole and Catch Basin"** Shall include the removal of the existing storm or sanitary manholes and basins as noted on the plans. Measurement and payment shall be made at the contract unit price per each, which shall be compensation in full for all labor, equipment, and materials necessary to maintain service flow, plug, remove and dispose the entire structure.

s 32.12 **Item 2104.509 "Remove Hydrant"** Shall include the removal of the existing hydrant as noted on the plans. If directed by the Engineer, all removed hydrants shall be delivered to Rochester Public Utilities at 4000 East River Road NE in Rochester, MN. Otherwise contractor shall dispose of hydrant at their expense. Measurement and payment shall be made at the contract unit price per each, which shall be compensation in full for all labor, equipment, and materials necessary remove and dispose the entire structure.

s 32.13 **Item 2104.521 "Salvage Guardrail"** Shall include the salvaging of the guardrail, by type, as noted on the plans. Measurement and payment shall be made at the contract unit price per linear foot, which shall be compensation in full for all labor, equipment, and materials necessary to complete the work. Any damage to the rail units shall be repaired or replaced at the expense of the Contractor.

s 32.14 **Measurement and payment** for the removal and disposal of materials will be made only for those Items of removal work specifically included for payment as such in the Proposal and as listed in the Plans. The removal of any unforeseen obstruction requiring in the opinion of the Engineer equipment or handling substantially different from that employed in excavation operations, will be paid for as Extra Work as provided in MnDOT 1403.

Item No.	Item	Unit
2104.501	REMOVE STONE MASONRY WALL	L F
2104.501	REMOVE CONCRETE CULVERT	L F
2104.501	REMOVE WATER MAIN	L F
2104.501	REMOVE SEWER PIPE (STORM)	L F
2104.501	REMOVE SEWER PIPE (SANITARY)	L F
2104.501	REMOVE CONCRETE BOX CULVERT	L F
2104.505	REMOVE SIDEWALK	S Y
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	S Y
2104.505	REMOVE BITUMINOUS PAVEMENT	S Y
2104.507	REMOVE GABION	C Y
2104.509	REMOVE CONCRETE HEADWALL	EACH
2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH
2104.509	REMOVE HYDRANT	EACH
2104.513	SAWING BITUMINOUS PAVEMENT	L F
2104.521	SALVAGE GUARD RAIL-PLATE BEAM	L F

S - 33 (2105) EXCAVATION AND EMBANKMENT

Roadway excavation and embankment construction shall be performed in accordance with the provisions of MnDOT 2105, except as modified below:

s 33.1 MnDOT 2105.2A2 Rock Excavation is revised to read as follows:

Rock excavation shall consist of all materials that cannot, in the Engineer's opinion, be excavated without drilling and blasting or without the use of rippers, together with all boulders and other detached rock each having a

volume of 1 cubic meter **(1 cubic yard)** or more, but exclusive of those quantities that are to be paid for separately under the item of rock channel excavation.

s 33.2 The last paragraph in MnDOT 2105.3B Preparation of Embankment Foundation, is revised to read as follows:

Before backfilling depressions within the roadway caused by the removal of foundations, basements, and other structures, the Contractor shall enlarge the depressions as directed by the Engineer.

s 33.3 The first and second sentences in the second paragraph in MnDOT 2105.3D Disposition of Excavated Material, are revised to read as follows:

When the soils are so varied that selection and placement of uniform soils is not practical, the Contractor shall use disks, plows, graders or other equipment to blend and mix suitable soils to produce a uniform soil texture, moisture content and density; except that, all soils that contain 20 percent or more particles passing the 75 um **(#200)** sieve shall be blended, mixed and dried with a disk, within the entire upper 2 meters **(6 feet)** of embankment. The disk shall meet the requirements of 2123 N, Disk Harrow. A disk is also to be used below the upper 2 meters **(6 feet)** of the embankment fill area, if in the opinion of the Engineer, the Contractor is not producing a uniform soil texture.

s 33.4 The fifth paragraph in MnDOT 2105.3D Disposition of Excavated Material, is revised to read as follows:

Peat, muskeg, and other unstable materials that are not to be used in the roadbed embankments shall be deposited in the areas indicated in the Plans or elsewhere as approved by the Engineer. All other material that is considered unsuitable for use in the upper portion of the roadbed shall be placed outside of a 1:1 slope down and outward from the shoulder lines on fills under 10 m **(30 feet)** in height or outside of a 1 vertical to 1.5 horizontal slope down and outward from shoulder lines on fills over 10 m **(30 feet)** in height, or used to flatten the embankment slopes, or disposed of elsewhere as approved by the Engineer.

s 33.5 The second sentence in the eighth paragraph of MnDOT 2105.3D Disposition of Excavated Material, is revised to read as follows:

No stones exceeding 150 mm **(6 inches)** in greatest dimension will be permitted in the upper 1 m **(3 feet)** of the roadbed embankment.

s 33.6 The fourth to last paragraph in MnDOT 2105.3D Disposition of Excavated Material, which begins with "All combustible debris materials (stumps, roots, logs, brush, etc.) together with all…" is hereby deleted and replaced with the following:

All noncombustible materials other than soils (oversized rock, broken concrete, metals, plastic pipe, etc.) shall be disposed of in accordance with 2104.3C.

s 33.7 The ninth paragraph of MnDOT 2105.5 is hereby deleted and replaced with the following:

If the Proposal fails to include a bid item for rock excavation or rock channel excavation, and material is uncovered that is so classified, excavation of the rock will be paid for separately at the Contract price for common excavation or common channel excavation, plus an additional $26.00 per cubic meter **($20.00 per cubic yard)** . If no bid item is provided for common channel excavation, excavation of materials classified as rock channel excavation will be paid for at the Contract price for common excavation plus an additional $28.00 per cubic meter **($21.50 per cubic yard)**. Such stipulated prices for rock excavation will apply up to a maximum of 200 m3 **(260 cubic yards)** of excavation per item or to such quantity as may be performed by mutual consent prior to execution of an Extra Work agreement.

s 33.8 The eleventh paragraph of MnDOT 2105.5 is hereby deleted and replaced with the following:

(a) That portion of the additional excavation that is removed from below a plane parallel to and 5 m **(15 feet)** below the natural ground surface will be measured in 2 m **(5 foot)** depth zone increments and paid for separately at adjusted unit prices. The adjusted unit price will be equal to the Contract bid price for muck excavation plus $0.39 per cubic meter **($0.30 per cubic yard)** for the additional excavation within the 5-7 m **(15-20 foot)** depth

zone and an additional $0.26 per cubic meter **($0.20 per cubic yard)** for each additional 2 m **(5 foot)** increment of depth beyond 7 m **(20 feet).**

s 33.9 Compaction of all embankment construction, including culvert backfills, shall be obtained by the "**Quality Compaction**" method described in MnDOT 2105.3F.

s 33.10 Excess soils and rock not used on the Project shall become the property of the Contractor and shall be disposed of outside of the Right of Way. No direct compensation will be paid for the preparation of an acceptable Disposal Plan or for Off-Project disposal of excess materials. Disposal sites shall be left in a well graded condition with all solid wastes and boulders adequately covered.

s 33.11 Measurement and Payment

Item No.	Item	Unit
2105.501	COMMON EXCAVATION (P)	C Y
2105.523	COMMON BORROW (CV)	C Y

S - 34 (2105) SELECT GRANULAR BORROW MODIFIED

Select Granular Borrow Modified shall be in accordance with the provisions of 2105 and 3149 except as follows:

Granular material shall comply with Mn/DOT section 3149.2B2 except that in addition not more than 50% of the material shall pass the No. 40 sieve.

Item No.	Item	Unit
2105.522	SELECT GRANULAR BORROW MOD(CV) (P)	C Y

S - 35 (2105) (3877) TOPSOIL BORROW

Topsoil Borrow shall be in accordance with the provisions of 2105 and 3138 except as follows:

Acceptance requirements will be based on the approval of the Engineer, and not by Table 3877-1 or 3877-2.

Item No.	Item	Unit
2105.525	TOPSOIL BORROW (CV) (P)	C Y

S - 36 (2123) EQUIPMENT RENTAL

The provisions of MnDOT 2123 are modified and/or supplemented with the following:

s 36.1 The following is added to MnDOT 2123.3 SPECIFIC REQUIREMENTS:

N Disk Harrow

The disk harrow shall be of sufficient size and mass to manipulate the soils to a depth of approximately 300 mm **[12 inches]** and shall meet the approval of the Engineer.

s 36.2 The following is added to MnDOT 2123.5 BASIS OF PAYMENT:

2123.610 Disk Harrow..... .....hour

S - 37 (2211) AGGREGATE BASE

Aggregate base courses shall be constructed in accordance with the provisions of MnDOT 2211 except as modified below:

s 37.1 **Item 2211.501 "Aggregate Base Class 2"** Shall include the placement of Class 2 aggregates only. A token quantity has been included in the Contract for the gravel driveway restoration. Measurement and payment shall be made at the contract unit price per ton, which shall be compensation in full for all labor, equipment, and materials necessary to complete the work.

s 37.2 **Item 2211.503 "Aggregate Base Class 5"** Shall include the placement of Class 5 or 7C aggregates for the roadway construction. Measurement and payment shall be made at the contract unit price per cubic yard placed, which shall be compensation in full for all labor, equipment, and materials necessary to complete the work.

s 37.3 Compaction shall be achieved by the **"Quality Compaction Method"** described in MnDOT 2211.3C.

s 37.4 The second sentence in MnDOT 2211.1 Description, is revised to read as follows:

The aggregate base shall be produced and placed under the Contractor's quality control program in accordance with the MnDOT Grading and Base Manual.

s 37.5 The last paragraph in MnDOT 2211. 3C2 Quality Compaction Method, is revised to read as follows:

The Engineer may elect to perform density tests as shown in the MnDOT Grading and Base Manual, as needed to assist inspection. The actual density obtained by testing the aggregate base must meet or exceed the requirements shown in 2211.3C1 Specified Density or 2211.3C3 Penetration Index Method in order to be acceptable.

s 37.6 The first sentence in MnDOT 2211.3F1 Gradation Control, is revised to read as follows:

The Contractor and/or aggregate producer shall be responsible for maintaining a gradation control program in accordance with the random sampling acceptance method described in the MnDOT Grading and Base Manual.

s 37.7 MnDOT 2211.3F2(d) under Acceptance Testing is hereby deleted and replaced with the following:

(d) Samples for gradation testing will be taken randomly by the Engineer prior to compaction, in accordance with the random sampling method described in the Grading and Base Manual.

s 37.8 MnDOT 2211.3F2(j) under Acceptance Testing, is revised to read as follows:

(j) One gradation sample will be taken from each sublot and tested. Payment will be based on the average results from the four sublot samples for each specified sieve.

s 37.9 The third paragraph after MnDOT 2211.3F2(k) under Acceptance Testing, is revised to read as follows:

A 5% price reduction will be assessed to both individual or averaged test lots for each test result that fails to meet specified gradations for sieve sizes not listed in Tables 2211-B and 2211-C by more than 2%. These price reductions are cumulative and shall be analyzed both separately and averaged by lot when applicable.

s 37.10 Table 2211-B in MnDOT 2211.3F2 Acceptance Testing, is hereby deleted and replaced with the following:

Table 2211-B

AGGREGATE BASE PAYMENT SCHEDULE

(4 Sublots/4 Samples)

% Passing Outside Specified Limits*		
4.75 mm **(#4)**, 2.00 mm **(#10)**, and 425 µm **(# 40)** Sieves	75 µm **(#200)** Sieve	Acceptance Schedule (Price Reduction)
1	0.1	5%
----------	0.2	6%
----------	0.3	9%
----------	0.4	11%
----------	0.5	14%
2	0.6	15%
> 2	> 0.6	Corrective Action

*Based on average of 4 tests Price reductions for more than one failing sieve size shall be cumulative. The compensation due to the Contractor for the quantity of material represented by the failing test results shall be reduced by the sum of the respective percentages. The Contractor does not have the option of taking a price reduction in lieu of complying with the Specifications.

s 37.11 The following is added to Table 2211-C in MnDOT 2211.3F2 Acceptance Testing:

Substantial compliance will be applied to no more than one test failure. Substantial compliance will be eliminated when two or more test failures occur and test failures meeting substantial compliance will be subject to the next higher price reduction. One sieve failure = one test failure. Test failures for each material type will be treated separately.

s 37.12 The following is added to Table 2211-D in MnDOT 2211.3F2 Acceptance Testing:

Substantial compliance will be applied to no more than one test failure. Substantial compliance will be eliminated when two or more test failures occur and test failures meeting substantial compliance will be subject to the next higher price reduction. Test failures for each material type will be treated separately.

s 37.13 Basis of Payment

All costs incurred by the Contractor for furnishing and installing Aggregate Base shall be incidental to other work.

Item No.	Item	Unit
2211.501	AGGREGATE BASE CLASS 2	TON
2211.503	AGGREGATE BASE (CV) CLASS 5	C Y

S - 38 (2301) CONCRETE PAVEMENT (2012 VERSION)

MnDOT 2301 is hereby deleted from the MnDOT Standard Specifications and replaced with the attached **(2301 Concrete Pavement) Specification**:

s 38.1 Adjustment of water valve boxes to finish grade and installing City furnished survey monument castings shall be considered incidental to the paving and no separate payment will be made therefore.

s 38.2 Concrete shall be cured by the use of membrane curing compound meeting the requirements of MnDOT 3754 AMS, and shall be considered incidental.

s 38.3 All Joint sealant shall conform to 3723, Concrete Joint and Crack Sealer (Hot-Poured Elastic Type Sealant). The location of transverse joints may be adjusted in the field by the Engineer. An increase in the number of transverse joints of up to 5% compared to the number shown on the plans, shall be considered incidental to concrete paving.

s 38.4 Immediately following the paver, the surface shall be straight-edged with a minimum of 10 feet long, straight-edge to remove irregularities and score marks.

s 38.5 Transverse metal-tine finishing will not be required.

s 38.6 **Item 2301.501 "Concrete Pavement"** Shall include all labor, equipment and materials to construct the standard concrete pavement included in the plans, including the colored concrete crosswalks. The cost to furnish and supply concrete to the site shall be paid for separately. All other costs associated with the concrete pavement construction shall apply to this bid item. Payment for porous concrete shall be included under a separate bid item.

s 38.7 **Item 2301.511 "Structural Concrete"** Shall include the cubic yard volume of standard concrete to be furnished and installed for the other areas of the project, as noted in the plans.

s 38.8 **Item 2301.529 "Reinforcement Bars (Epoxy Coated)"** provides payment for #13 epoxy coated tie-bars used on longitudinal pavement joints, for #18 epoxy coated reinforcing bars used at dead-end joints. Payment for typical reinforcement bars around castings, as shown on the plans, shall be considered incidental to the concrete paving, and no separate payment will be made therefor.

s 38.9 **Item 2301.538 "Dowel Bars"** is provided for the doweled transverse joints. Payment for dowel bars at the bid price shall be compensation in full for all costs associated to furnishing and placing dowels at the transverse joints.

s 38.10 MnDOT 2301.2A is hereby deleted and replaced with the following:

A Concrete 2461

A1 Incentives/Disincentives

This Contract **does not include** concrete aggregate quality incentive/disincentive provisions.

s 38.11 MnDOT 2301.2A7a(3) Coarse Aggregate Gradation is replaced as follows:

All coarse aggregate for concrete pavement shall meet the gradation requirements of MnDOT 3137 CA-50.

Item No.	Item	Unit
2301.501	CONCRETE PAVEMENT	S Y
2301.511	STRUCTURAL CONCRETE	C Y
2301.521	PAVEMENT REINFORCEMENT	S Y
2301.529	REINFORCEMENT BARS (EPOXY COATED)	LB
2301.538	DOWEL BAR	EACH

S - 39 (2357) BITUMINOUS MATERIAL FOR TACK

The provisions of MnDOT 2357 are hereby deleted and replaced with the following:

s 39.1 Description

This work shall consist of the application of bituminous material (emulsion or liquid asphalt) on a bituminous or concrete pavement prior to paving a new lift of Hot Mixed Asphalt.

s 39.2 Materials

A Bituminous Material.....3151

The bituminous material for tack coat will be limited to one of the following kinds of emulsified asphalt. However, the Engineer may authorize the use of medium cure cutback asphalt (MC-250) during the early and late construction season when it is anticipated the air temperature may drop below 32 degrees Fahrenheit.

Allowable grades are as follows:

Emulsified Asphalt

Cationic CSS-1, CSS-1h

Cutback Asphalt

Medium Cure Liquid Asphalt..... MC-250

Only Certified Sources are allowed for use. MnDOT's Certified Source List is located at the following link: http://www.dot.state.mn.us/products/index.html.

s 39.3 Construction Requirements

A Restrictions

Tack coat operations shall be conducted in a manner that offers the least inconvenience to traffic, with movement in at least one direction permitted at all times without pickup or tracking of the bituminous material.

The tack coat shall not be applied when the road surface or weather conditions are unsuitable as determined by the Engineer. The daily application of tack coat shall be limited to approximately the area on which construction of the subsequent bituminous course can reasonably be expected to be completed that day.

B Equipment

The bituminous material shall be applied with a distributor meeting the requirements of 2321.3C1.

C Road Surface Preparations

At the time of applying bituminous tack coat material, the road surface shall be dry and clean and all necessary repairs or reconditioning work shall have been completed as provided for in the Contract and approved by the Engineer.

All objectionable foreign matter on the road surface shall be removed and disposed of by the Contractor as the Engineer approves.

Preparatory to placing an abutting bituminous course, the contact surfaces of all fixed structures and the edge of the in-place mixture in all courses at transverse joints and in the wearing course at longitudinal joints shall be given a uniform coating of liquid asphalt or emulsified asphalt, applied by methods that will ensure uniform coating.

D Application of Bituminous Tack Coat Material

Unless otherwise indicated in the plans or provisions, the bituminous tack coat material shall be applied within the application rates shown below in Table 2357.3-D as based on pavement type or condition and type of bituminous material. The Engineer shall approve the time and rate of application. Only a MnDOT certified asphalt emulsion supplier is allowed to dilute the emulsion. When diluted, the supplier shall provide asphalt emulsion diluted 1 part emulsion to 1 part water. Dilution of asphalt emulsion in the field is not allowed. The Engineer may waive the tack coat requirement when multiple lifts are paved on the same day.

Table 2357.3-D

Tack Coat Application Rates

Pavement Type or Condition	Application Rate, liter/square meter **[gallons/sy]**		
	Undiluted Emulsion SS-1, SS-1H, CSS-1, CSS-1H	Diluted Emulsion (1 part Emulsion to 1 part water) [1] SS-1, SS-1H, CSS-1, CSS-1H	MC Cutback[2] MC-250
New HMA	0.14 - 0.23 **[0.03 – 0.05]**	0.28 - 0.46 **[0.06 - 0.10]**	0.14 - 0.23 **[0.03 - 0.05]**
Aged HMA[3] or Un-milled PCC	0.23 - 0.37 **[0.05 - 0.08]**	0.46 - 0.69 **[0.10 - 0.15]**	0.23 - 0.37 **[0.05 - 0.08]**
Milled HMA or Milled PCC	0.32 - 0.46 **[0.07 - 0.10]**	0.64 - 0.92**[0.14 - 0.20]**	0.32 - 0.46 **[0.07 - 0.10]**

1- As provided by the asphalt emulsion supplier

2- When approved by the Engineer

3- Older than 1 year

The temperature of the bituminous material at the time of application shall be approved by the Engineer, within the limits specified following:

SS-1, SS-1H, CSS-1, CSS-1H ..... 21 to 71°C **(70 to 160° F)**

MC-250 ..... 74 to 104°C **(165 to 220° F)**

Unless otherwise directed, sand shall be spread on the newly tacked surface at pedestrian crossings.

s 39.4 Method of Measurement

A. Bituminous Material

Bituminous material used for tack coat will be measured at 15°C (60°F)

s 39.5 Basis of Payment

Bituminous material for tack coat will be incidental to Wear Course Mix.

S - 40 (2360) PLANT MIXED ASPHALT PAVEMENT (2012 VERSION)

MnDOT 2360 is hereby deleted from the MnDOT Standard Specifications and replaced with the attached **2360 (Plant Mixed Asphalt Pavement) Specification**:

s 40.1 Mix Designation Numbers for the bituminous mixtures on this Project are as follows:

Roadways, Trails and Driveways:

TYPE SP 9.5 WEARING COURSE MIX (2,B)	SP WE A 2 30 B
TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	SP NW B 2 30 B

s 40.2 The sentence "In addition to the list the above pavement surface must meet requirements of 2399 (Pavement Surface Smoothness) requirements." is deleted from **2360.3.E Surface Requirements** of the attached **2360 (Plant Mixed Asphalt Pavement) Specification**. Pavement smoothness requirements in Section S-2399 (PAVEMENT SURFACE SMOOTHNESS) of these Special Provisions **will** apply on this Project.

s 40.3 **2360.3 D Compaction:** All compaction shall be by the **Ordinary Compaction Method** as described in 2360.3.D.2.

s 40.4 Basis of Payment

Payment for the accepted quantities of asphalt mixture used in each course at the Contract prices per unit of material shall be compensation in full for all costs of constructing the asphalt surfacing as specified, including the costs of furnishing and incorporating any asphalt binder, mineral filler, hydrated lime, or anti-stripping additives that may be permitted or required.

Apply reduced payment only when mixture includes steel slag as one of the aggregate proportions. If the production Marshall lab density at the recommended or established asphalt content is in excess of 2565 kg/m3 **[160 pounds per cubic foot]**, payment for mixture will be calculated at the following percent of the Contracted unit price.

% Payment = {100 - [{100 x (production density at design gyrations - 2565)} / 2565]}

% Payment = {100 - [{100 x (production density at design gyrations - 160)} / 160]} ENGLISH

In the absence of Contract items covering shoulder surfacing and other special construction, the accepted quantities of material used for these purposes will be included for payment with the wearing course materials.

The Contractor is responsible to complete yield checks and monitor thickness determinations so that the constructed dimensions correspond with the required Plan dimensions throughout the entire length of the Project. The tolerances for lift thickness shown in 2360.7A and B, Thickness and Surface Smoothness

Requirement is for occasional variations and not for continuous over-running or under-running, unless ordered or Authorized by the Engineer.

Payment for plant mixed asphalt surface will be made on the basis of the following schedule:

Item No.	Item	Unit
2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON
2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	TON

S - 41 (2461) STRUCTURAL CONCRETE

The provisions of MnDOT 2461 are modified in accordance with the following:

s 41.1 MnDOT 2461.3B shall be deleted and replaced with the following:

B Classification of Concrete

The Department will classify concrete by type, grade, consistency, and aggregate size. Refer to the mix number and Table 2461-2 to determine the mix requirements for each item of work.

Table 2461-2
Mix Number Identification

First Digit	Second Digit	Third Digit	Fourth Digit	Additional Digits
Type	Grade	Slump range	Coarse aggregate gradation range	Class A coarse aggregate when required, modified mix designation, or both

Refer to individual Contract items in the Standard Specification for Mix Numbers. Deviations from the specified Mix Numbers require coordination with the Concrete Engineer.

If the Contract does not show a concrete mix number, provide Type 3, Grade Y concrete with a slump and aggregate gradation determined by the Engineer.

The Department will designate grout by type and grade followed by the word "GROUT." Do not provide grout containing coarse aggregate. If the Plans do not show a type or grade for grout, provide 3A GROUT.

B1 Type Designation

Provide Type 1 or Type 3 concrete in accordance with Table 2461-3:

Table 2461-3
Concrete Type Designation

Concrete Type	Target Air Content*, %	Maximum Water/Cement Ratio ‖
1	2.0	≤ 0.53 for 1A43 ≤ 0.68 for 1C62 ≤ 0.64 for 1C Grout
3	6.5 †	≤ 0.45†#

* For concrete mix design purposes only
‖ The water/cement ratio is defined as the ratio of the total water weight to the total cementitious weight.
† Unless otherwise required by 2301 or elsewhere in the Contract.
#The maximum water/cement ratio for machine placed concrete is 0.42.

B2 Grade Designation

The Department will designate concrete grade using a letter to represent the anticipated compressive strength and the minimum cementitious content in accordance with 2461.3C, "Cementitious Content," and Table 2461-4:

Table 2461-4
Concrete Grade Designation

Concrete Grade	Type 1 Anticipated Compressive Strength, *psi [MPa]* *	Type 3 Anticipated Compressive Strength, *psi [MPa]* *
U	6,300 [43]	5,600 [39]
V	6,000 [41]	5,300 [37]
W	5,700 [39]	5,000 [34]
X	5,400 [37]	4,700 [32]
Y	5,000 [34]	4,300 [30]
A	4,500 [31]	3,900 [27]
B	4,100 [28]	3,400 [23]
C	3,200 [22]	2,700 [19]

* Anticipated minimum strength produced in accordance with the Department specifications and cured for 28 days under laboratory conditions.

The Concrete Engineer, in coordination with the Engineer, may increase the cement content for concrete with test cylinder results less than the anticipated compressive strength in accordance with Table 2461-4, "Concrete Grade Designation." The Contractor may request an increase in the cement content as approved by the Engineer, in conjunction with the Concrete Engineer.

B3 Slump Designation

Refer to the slump designation for the upper limit of the slump range without a water reducer in accordance with Table 2461-5:

Table 2461-5
Slump Designation

Slump Designation	Slump Range without Water Reducer, *in [mm]*
1	½ – 1 [12 – 25]
2	1 – 2 [25 – 50]
3	1 – 3 [25 – 75]
4	2 – 4 [50 – 100]
5	2 – 5 [50 – 125]
6	3 – 6 [75 – 150]

B4 Coarse Aggregate (CA) Designation

Refer to the coarse aggregate designation for the range of optional coarse aggregates gradations allowed in the mix in accordance with Table 3137-4, "Coarse Aggregate Designation for Concrete," and Table 2461-6:

Table 2461-6
Coarse Aggregate Designation for Concrete

Range	Optional Coarse Aggregate Designation
0	CA-00 only
1	CA-15 to CA-50, inclusive
2	CA-15 to CA-60, inclusive
3	CA-35 to CA-60, inclusive
4	CA-35 to CA-60, inclusive
5	CA-45 to CA-60, inclusive
6	CA-50 to CA-70, inclusive

7	CA-70 only
8	CA-80 only

B5 Additional Designations

For mix designs that require a specified class of coarse aggregate as defined in 3137.2.B, an additional letter will follow the fourth digit of the Mix Number such as "A" (Class A Aggregate Requirement).

The Engineer may identify special concrete mix designations with additional letters following the last digit such as "HE" (High Early), "WC" (Water-Cement Ratio), "HPC" (High Performance Concrete), "MS" (Microsilica), or others.

s 41.2 MnDOT 2461.3E shall be deleted and replaced with the following:

E Concrete Admixtures.....3113

The Contractor may use the following approved admixtures listed on the Approved Products list:

1. Type A, "Water Reducing Admixtures,"
2. Type B, "Admixtures Identified as Hydration Stabilizers," or
3. Type S, "Viscosity Modifying Admixtures."

Use of any other admixtures in the concrete requires approval of the Concrete Engineer unless otherwise required by or allowed in the Contract.

When incorporating admixtures into the concrete:

4. Use admixture dosage rates recommended by the manufacturer.
5. Add all admixtures at the plant.
6. Provide admixture additions at the job site that are the same products as originally incorporated into the mix.
7. Use calcium chloride in concrete as approved by the Engineer, in conjunction with the Concrete Engineer. Do not use calcium chloride in units containing prestressing steel or in bridge superstructure concrete.

E1 Use of Additional Admixtures

On a case by case basis, the Engineer, in conjunction with the Concrete Engineer, will consider the use of the following admixtures, added either at the plant or at the job site, as listed on the Approved Products list:

(1) Type C, "Accelerating Admixtures"
(2) Type E, "Water Reducing and Accelerating Admixtures"
(3) Type F, "Water Reducing, High Range Admixtures"
(4) Type G, "Water Reducing, High Range and Retarding Admixtures"

E1a Delivery Time Beyond 90 Minutes

If the haul time does not facilitate mixing and placing the concrete within 90 minutes, perform the following procedures for pre-qualifying a concrete mix to extend the delivery time to 120 minutes. Extending the delivery time beyond 120 minutes will require additional testing at 30 minute intervals up to the maximum desired delivery time as directed by the Concrete Engineer.

(1) Provide a contractor mix design in accordance with 2461.3G2 for each combination of materials.
(2) Specification 2461.3D is modified to allow up to 25% fly ash replacement for cement. All other requirements of 2461 apply.
(3) Laboratory trial batching on the proposed mix includes the following testing requirements:
  (a) Perform all laboratory trial batching at an AMRL accredited laboratory.
  (b) Perform all plastic concrete testing after adding all admixtures to the concrete mixture.
  (c) Perform slump, air content, unit weight and temperature testing immediately after batching and at 90 and 120 minutes.
  (d) Fabricate concrete cylinders for compressive strength at 90 and 120 minutes (sets of 3) and cylinders for hardened air content testing at 90 and 120 minutes (sets of 5).

(e) Test the cylinders for compressive strength at 28 days.

(f) Determine the hardened air content (ASTM C457) at a minimum of 7 days. The Contractor is required to test at 2 samples representing 90 minutes and 2 samples representing 120 minutes and provide MnDOT with the other 6 samples for testing at their discretion. Retain any hardened concrete test specimens for a minimum of 90 days for MnDOT to examine at their discretion.

(g) Ensure the admixture manufacturer's technical representative is present during the trial batching.

(h) Contact the MnDOT Concrete Engineering Unit a minimum of 2 days prior to mixing. This same 2 day notification is required prior to any physical testing on hardened concrete samples.

(i) Once accepted by the Concrete Engineer, the laboratory trial batching is considered acceptable for use for 5 years, unless it is determined the material sources have changed significantly since the initial laboratory testing and acceptance. In all cases, the Engineer will require field trial batching on a project specific basis.

(4) Field trial batching on the proposed mix for each specific project shall include batching in the presence of the Engineer and the following:

(a) Provide a QC Plan for extending the delivery time beyond 90 minutes.

(b) Mix and transport the concrete using the same materials as were utilized in the laboratory trial batching.

(c) Batch a minimum 5 cu. yd (4 cu. m) of concrete utilizing the same methods intended for use when supplying concrete placed into the permanent work.

(d) Maintain the ready mix truck in transit; by either driving around the yard or on the roadway; and maintain the drum speed at 5 to 7 revolutions per minute for the entire 120 minutes.

(e) Perform all plastic concrete testing after adding admixtures to the concrete mixture.

(f) Perform slump, air content, unit weight and temperature testing at 90 and 120 minutes.

(g) Fabricate concrete cylinders for compressive strength at 90 and 120 minutes (sets of 3) and cylinders for hardened air content testing at 90 and 120 minutes (sets of 2).

(h) Test the cylinders for compressive strength at a minimum of 7 days.

(i) Determine the hardened air content (ASTM C457) at a minimum of 7 days. The Contractor is required to test 1 sample representing 90 minutes and 1 sample representing 120 minutes and provide MnDOT with the other 2 samples for testing at their discretion. Retain any hardened concrete test specimens for a minimum of 90 days for MnDOT to examine at their discretion.

(j) Incorporate the trial batch concrete into other work with the approval of the Engineer.

(k) The Contractor must demonstrate to the Engineer the ability to properly mix, control and place the concrete.

(5) The Concrete Engineer, in coordination with the Engineer, will review the trial batch results and all related concrete testing for compliance with the QC Plan and the Contract. Final approval of the mixture is based on satisfactory field placement and performance.

s 41.3 MnDOT 2461.3F shall be deleted.

s 41.4 MnDOT 2461.3G, 2461.3H, and 2461.3J shall be deleted and replaced with the following:

G Job Mix Proportions

G1 Department Designed

The Department will provide the estimated composition of concrete mixes unless otherwise required by the Contract.

The Department may adjust the mix composition of the concrete without adjusting the Contract unit price for any items of work.

G1a Concrete Yield

The Department defines concrete yield as the ratio of the volume of mixed concrete, less accountable waste, to the planned volume of the work constructed. The Department will not assume responsibility for the yield from a given volume of mixed concrete.

G1b High-Early Strength Concrete

When the Engineer requires high-early strength concrete, the concrete is designed in accordance with the following:

- Increasing the cement content of the concrete up to 30 percent and/or using an approved accelerator as allowed by the Engineer, in conjunction with the Concrete Engineer
- Using 100 percent portland cement unless allowed by the Contract or the Engineer
- A maximum cement content for a cubic yard [cubic meter] of concrete not to exceed 900 lb **[535 kg]**.
- A w/c ratio not to exceed 0.38 for Type 3 Concrete unless specified elsewhere in the Contract.

G2 Contractor Designed

Design the concrete mix based on an absolute volume of 27.00 cu. ft ± 0.10 cu. ft **[1.000 cu. m ± 0.003 cu. m]** for the following:

(1) Concrete paving mixes in accordance with 2301,
(2) Concrete mixes with an anticipated or required 28-day compressive strengths of at least 5,000 psi **[34 Mpa]**,
(3) Precast concrete in accordance with 2405, 2412, 3236, 3238, 3621, 3622, 3630, 3661, and 3667
(4) Colored concrete
(5) Stamped concrete
(6) Cellular Concrete Grout – Controlled Low Strength Material (CLSM)
(7) Extended Delivery Times Beyond 90 minutes
(8) Concrete as otherwise required by the Contract.

Submit the concrete mixes utilizing the MnDOT Contractor Mix Design Submittal Package available on the Department's website at least 21 calendar days before initial placement of the concrete mix. The Concrete Engineer will provide specific gravity and absorption data for mix design calculations.

The Concrete Engineer will review the mix design submittal and approve the materials and mix design for compliance with the Contract.

The Contractor assumes full responsibility for the mix design and performance of the concrete.

The Engineer determines final acceptance of concrete for payment based on satisfactory field placement and performance.

s 41.5 MnDOT 2461.4A2(c) shall be deleted and replaced with the following:

Do not place concrete when the air temperature at the point of placement is below 36 °F [2 °C] or is expected to fall below 36 °F [2 °C] within the following 24 h period unless approved cold-weather provisions are in-place. Discontinue concrete placement if the air temperature falls below 36 °F [2 °C].

s 41.6 MnDOT 2461.4A4a shall be deleted and replaced with the following:

A4a Consistency

The Engineer will test the concrete for consistency using the slump test during the progress of the work. The Department may reject concrete batches with consistencies outside of the slump range in accordance with Table 2461-10. If any test shows the slump in excess of the upper limit of the slump range, the Engineer will reject the concrete represented by that test unless the Contractor makes adjustments to the concrete before use.

Adjust the slump within the allowable range to optimize both placement and finishing.

If not using a Department approved Type A water reducer at the manufacturer's recommended dosage rates listed on the Approved Products list, meet the slump values for the slump range without water reducer in accordance with Table 2461-10.

If using a Department approved Type A water reducer at the manufacturer's recommended dosage rates listed on the Approved Products list, meet the slump values for the slump range with water reducer in accordance with Table 2461-10.

Table 2461-10
Slump Range Designation

Slump Designation	Slump Range without Water Reducer, *in [mm]*	Slump Range with Water Reducer, *in [mm]*
1	½ – 1 **[12 – 25]**	½ – 1 **[12 – 25]**
2	1 – 2 **[25 – 50]**	1 – 3 **[25 – 75]**
3	1 – 3 **[25 – 75]**	1 – 4 **[25 – 100]**
4	2 – 4 **[50 – 100]**	2 – 5 **[50 – 125]**
5	2 – 5 **[50 – 125]**	2 – 6 **[50 – 150]**
6	3 – 6 **[75 – 150]**	3 – 7 **[75 – 175]**

Contact the Engineer if encountering unusual placement conditions that render the specified slump range unsuitable. The Department will provide mix composition modifications to provide the desired change in consistency while maintaining the other specified properties of the concrete mix. Do not add water solely to temporarily facilitate the placement of concrete.

A4a(1) Concrete Placed by the Slip-Form Method
Place concrete that does not slough and is adequately consolidated at a slump value that optimizes placement for the designated mixture.

A4a(2) Non-Conforming Material
Only place concrete meeting the slump requirements in the work. If the Contractor places concrete not meeting the slump requirements into the work, the Engineer will not accept nonconforming concrete at the Contract unit price.

For concrete not meeting the required slump, the Engineer will make determinations regarding the disposition, payment, or removal. The Department will adjust the Contract unit price for the Contract pay item of the concrete in accordance with Table 2461-11A, 2461-11B, 2461-11C and 2461-11D. When there is not a separate Structural Concrete bid price for an item of work or the concrete is a minor component of the unit bid price, the Department will reduce payment based on a concrete price of $100.00 per cu. yd [$130.00 per cu. m] or Contractor-provided invoice amount for the concrete in question, whichever is less.

Table 2461-11A
General Concrete*

Outside of Slump Range	Adjusted Contract Unit Price
Below slump range*	The Department will pay 95 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
≤ 1½ in **[40 mm]** above slump range	The Department will pay 75 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
1¾ in **[45 mm]** – 2¼ in **[55 mm]** above slump range	The Department will pay 50 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
> 2¼ in **[55 mm]** above slump range	The Department will pay 25 percent of the relevant Contract unit price for materials placed as approved by the Engineer

* If the Contractor places piling or footing concrete below the slump range, the Department will deduct $100 per cu. yd **[$130 per cu. m]** or a Contractor-provided invoice amount to the relevant Contract unit price of the concrete represented by the slump test, whichever is less. The Department will not reduce Contract unit price for low slump concrete placed with the slip-form method as approved by the Engineer.

Table 2461-11B Bridge Deck Concrete	
Outside of Slump Range	**Adjusted Contract Unit Price**
Below slump range	The Department will pay 95 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
≤ 1½ in **[40 mm]** above slump range	The Department will pay 75 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
> 1½ in **[40 mm]** above slump range	The Department will pay 25 percent of the relevant Contract unit price for materials placed as approved by the Engineer.

Table 2461-11C Low Slump Bridge Deck Concrete From ½ in [12 mm] to 1 in [25 mm]	
Outside of Slump Range	**Adjusted Contract Unit Price**
Below slump range	No deduction for materials placed as approved by the Engineer
≤ ½ in **[12 mm]** above slump range	The Department will pay 50 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
> ½ in **[12 mm]** – ¾ in **[20 mm]** above slump range	The Department will not pay for concrete placed but will allow the concrete to remain in place as approved by the Engineer.
> ¾ in **[20 mm]** above slump range	The Department will not pay for concrete. Provide additional testing as directed by the Engineer to determine if the concrete can remain or place or is subject to removal and replacement.

Table 2461-11D Low Slump Concrete — Patching From ½ in [12 mm] to 1 in [25 mm]	
Outside of Slump Range	**Adjusted Contract Unit Price**
Below slump range	No deduction for materials placed as approved by the Engineer
≤ ½ in **[12 mm]** above slump range	The Department will pay 75 percent of the relevant Contract unit price for materials placed as approved by the Engineer.
≥ ¾ in **[20 mm]** above slump range	The Department will pay 25 percent of the relevant Contract unit price for materials placed as approved by the Engineer.

s 41.7 MnDOT 2461.4A4b shall be deleted and replaced with the following:

A4b Air Content
Maintain the air content of Type 3 general concrete at the specified target of 6.5.percent ±1.5 percent of the measured volume of the plastic concrete in accordance 1503.

Make any adjustments immediately to maintain the desired air content.

Measure the air content at the point of placement but before consolidation.

A4b(1) Non-Conforming Material
Only place Type 3 concrete meeting the air content requirements in the work. If the Contractor places Type 3 concrete not meeting the air content requirements into the work, the Engineer will not accept nonconforming concrete at the Contract unit price.

For concrete not meeting the required air content, the Engineer will make determinations regarding the disposition, payment, or removal. The Department will adjust the Contract unit price for the Contract pay item of the concrete in accordance with Table 2461-17. When there is not a separate Structural Concrete bid price for an item of work or

the concrete is a minor component of the unit bid price, the Department will reduce payment based on a concrete price of $100.00 per cu. yd **[$130.00 per cu. m]** or the Contractor-provided invoice amount for the concrete in question, whichever is less.

General Concrete (Target Air Content 6.5%)	
Air Content, %	**Adjusted Contract Unit Price**
> 10.0	The Department will pay 75 percent of the relevant Contract unit price for the concrete represented for material placed as approved by the Engineer.
>8.0 – 10.0	The Department will pay 95 percent of the relevant Contract unit price for the concrete represented for material placed as approved by the Engineer.
5.0 – 8.0	The Department will pay 100 percent of the relevant Contract unit price for the concrete represented, for material placed as approved by the Engineer.
>4.0 – <5.0	The Department will pay 75 percent of the relevant Contract unit price for the concrete represented for material placed as approved by the Engineer.
>3.5 – 4.0	The Department will pay 25 percent of the relevant Contract unit price for the concrete represented and placed as approved by the Engineer. If the Engineer, in conjunction with the Concrete Engineer, determines the surface is exposed to freeze-thaw cycling, coat the concrete with an approved epoxy penetrant sealer from the MnDOT Approved Products list.
≤ 3.5	Remove and replace concrete in accordance with 1503, "Conformity with Plans and Specifications" and 1512, "Unacceptable and Unauthorized Work" as directed by the Engineer. If the Engineer, in conjunction with the Concrete Engineer, determines the concrete can remain place, the Engineer will not pay for the concrete and if the Engineer determines the surface is exposed to salt-brine freeze-thaw cycling, coat with an approved epoxy penetrant sealer from the MnDOT Approved Products list.

s 41.8 MnDOT 2461.4A5 shall be deleted and replaced with the following:

A5 Test Methods and Specimens
The Engineer will furnish molds for the test specimens in accordance with the following based on the maximum aggregate size:

(1) 4 in × 8 in **[100 mm × 200 mm]** cylinder molds,
(2) 6 in × 12 in **[150 in × 300 mm]** cylinder molds for maximum aggregate sizes greater than 1¼ in **[31.5 mm]**,
(3) 6 in × 6 in × 20 in **[150 in × 150 in × 500 mm]** beam molds, use other beam mold sizes as approved by the Engineer.

Provide curing tanks of adequate size and number for curing all of the concrete test specimens in accordance with 2031.3.C. Supply the curing tanks with heaters to maintain a water temperature of 73° F ± 3° F **[23° C ± 2° C]**.

If Contractor testing is required in the Contract, perform the following:

(1) Provide a MnDOT Certified Concrete Field 1 Technician to perform all Contractor Testing.
(2) Determine the required testing rates in accordance with the Schedule of Materials Control,
(3) Take samples after the first ¼ cu yd [cu. m] and before discharging the last ¼ cu. yd **[cu. m]** of the batch,
(4) Perform concrete sampling and testing meeting the requirements of the MnDOT Concrete Manual,
(5) Measure slump and air content, and make strength specimens when placing the concrete,
(6) Record field measurements, including strength specimen identifications on MnDOT Form 2448, *Weekly Concrete Report*, to provide to the Concrete Engineer.

The Engineer will transport the cylinders to the Agency laboratory for testing.

A5a Standard Strength Cylinders

The Department will perform the following for standard strength cylinders:

(1) Cast cylinders for testing at 28 days,
(2) Mark cylinders for identification of the represented unit or section of concrete,
(3) Cure the cylinders meeting the requirements of the MnDOT Concrete Manual, and
(4) Submit cylinders and a completed cylinder identification card to the Agency laboratory.

The Producer of precast units is responsible for casting standard strength cylinders.

A5b Control Strength Cylinders

The Engineer will use control cylinders to determine when the sequence of construction operations is dependent upon the rate of concrete strength development. The Engineer will cast enough control cylinders to determine when the concrete attains the required strength for all desired control limitations.

The Department will perform the following for control strength cylinders:

(1) Cast up to three (3) control cylinders. Any additional control cylinders are the responsibility of the Contractor,
(2) Cure the cylinders in the same location and under the same conditions as the concrete structure or unit involved meeting the requirements of the Concrete Manual,
(3) Mark control cylinders for identification of the represented unit or section of concrete, and
(4) Submit cylinders and a completed cylinder identification card to the Agency laboratory.

If the Agency is unavailable to test the control cylinders, the Contractor shall submit the control cylinders to an independent testing facility for testing or the Contractor may perform the testing on the control cylinders on a portable mechanical or hydraulic testing machine checked and calibrated with a standard proving ring as approved by the Engineer and in the presence of the Engineer.

The Producer of precast units is responsible for casting control strength cylinders.

A5c Strength Specimens for Concrete Paving

Use flexural beams to determine strength or provide cylinders as allowed by the Contract or approved by the Engineer.

Cast standard beams or cylinders for testing at 28 days.

Cast a sufficient number of control beams or cylinders to determine when the concrete attains the required strength for all desired control limitations.

Cure the standard beams or cylinders meeting the requirements of the MnDOT Concrete Manual.

Cure the control beams or cylinders in the same location and under the same conditions as the concrete structure or unit involved meeting the requirements of the MnDOT Concrete Manual.

The Engineer will test the flexural beams and record the results on MnDOT Form 2162, "*Concrete Test Beam Data.*"

If using cylinders, the Engineer will submit cylinders and a completed identification card to the Agency laboratory.

s 41.9 MnDOT 2461.4D1 shall be deleted and replaced with the following:

D Certified Ready-Mix Concrete

D1 Definition

The Department defines ready-mix concrete as one of the following:

(1) Central-mixed concrete proportioned and mixed in a stationary plant and hauled to the point of placement in revolving drum agitator trucks or a truck mixer, or
(2) Truck-mixed concrete proportioned in a stationary plant and fully mixed in truck mixers.

Commonly uses certified ready-mix terms are defined in the following:

Certified Ready-Mix Terminology	
Term	Definition
Mix design water	The maximum allowable water content for 1 cu. yd **[1 cu. m]** of concrete in accordance with MnDOT Form TP 02406, *Estimated Composition of Concrete Mixes*.
Total moisture factor	Factor used to determine total amount of water carried by a given wet aggregate.
Absorption factor	Factor used to determine the water contained within the pores of the aggregate and is held within the particles by capillary force.
Free moisture	The water that is carried on the surface of the aggregate that becomes part of the total water.
Batch water	Water actually batched into the truck by the batcher.
Total water	Batch water added to free moisture. Total water may also include the water used in diluting admixture solutions.
Temper water	Water added in mixer to adjust slump.
Total actual water	The water in the concrete mixture at the time of placement from any source other than the amount absorbed by the aggregate. It includes all batch water placed in the mixer, free moisture on the aggregate and any water added to the ready mix truck prior to placement.
Ready-Mix Producer or "Producer"	Party that is producing the concrete for the Contract. It is understood that the Ready-Mix Producer is the agent of the Contractor.

s 41.10 MnDOT 2461.4D2 shall be deleted and replaced with the following:

D2 General Requirements

Supply all ready-mix concrete from MnDOT Certified Concrete Plants in accordance with 2461.4D7.

The Engineer will reject ready-mix concrete delivered to the work site not meeting the specified requirements for delivery time, consistency, quality, air content, or other properties as unacceptable work in accordance with 1512, "Unacceptable and Unauthorized Work."

Provide batches for a delivered load of concrete in sizes of at least 1 cu. yd **[1 cu. m]**.

Handle washout water in accordance with 1717.

s 41.11 MnDOT 2461.4D3 shall be deleted and replaced with the following:

D2 Notice of Inspection

Notify the Engineer at least 24 h before beginning concrete production to allow the Engineer time to provide inspection forces needed for the work and to approve preparations for concrete placement. If the Contractor fails to provide 24 h notice, the Engineer may delay concrete placement in accordance with 1503, "Conformity with Plans and Specifications" and 1512, "Unacceptable and Unauthorized Work."

If the producer needs to change plants during placement, notify the Engineer and obtain approval before changing the plant.

s 41.12 The first two paragraphs of MnDOT 2461.4D5c shall be deleted and replaced with the following:

D5c Mixing In Truck Mixer

Charge the materials into the truck mixer drum by introducing sufficient water before adding solid materials. Perform charging operations without losing materials.

Leave the truck mixer at the plant site for a minimum of 5 minutes or 50 revolutions during the mixing period. Transport the concrete at agitating speed to the point of placement.

- MnDOT 2461.4D6 shall be deleted and replaced with the following:

If using a Department approved Type A, "Water reducing or Mid Range Water Reducing Admxiture" at the manufacturer's recommended dosage rates listed on the Approved Products list, meet the slump values for the slump range with water reducer in accordance with Table 2461-10.

D6 Delivery Requirements

Place concrete into the work in accordance with the following:

(1) Type 1 Concrete – within 90 minutes of batching, and
(2) Type 3 Concrete – within 90 minutes of batching when all admixtures are added at the plant at the manufacturer's recommended dosage rates listed on the Approved Products list. If the haul time does not facilitate mixing and placing the concrete within 90 minutes, test the concrete in accordance with 2461.3E1a.

In any case, do not add additional mixing water once the concrete is 60 minutes old.

Mix the load a minimum of 5 minutes or 50 revolutions at mixing speed after addition of any admixture.

The Contractor may transport Type 3 concrete in non-agitating equipment if the concrete is discharged within 45 minutes of batching.

Batch time starts when the batch plant or the transit mix truck adds the cement to the other batch materials.

D6a Field Adjustments

The Engineer will test the concrete for compliance with 2461.4A4a and 2461.4A4b according to the following:

(1) If the first test taken by the Engineer passes, the Engineer will resume verification testing according to the Schedule of Materials Control.
(2) If the first test taken by the Engineer fails, make adjustments and perform any quality control testing prior to the Engineer performing a final test. Acceptance or rejection of the truck is based on the Engineer's final test result.
(3) The Engineer will test up to 2 additional trucks according to 2461.4D6a(1) and 2461.4D6a(2).
(4) If the concrete is not within specification after the first 3 trucks, the Engineer will reduce their verification testing rate to once per truck for acceptance.
(5) Once the Engineer returns to normal verification testing according to the Schedule of Materials Control and a failing test occurs, the Engineer will repeat 2461.4D6a(2), 2461.4D6a(3) and 2461.4D6a(4).

s 41.13 MnDOT 2461.4D7 shall be deleted and replaced with the following:

D7 Certified Ready-Mix Plant Program

Provide ready-mix concrete produced by a certified ready-mix plant. Perform quality control of concrete production under a certification program for ready-mix concrete plants.

Complete all concrete plant documentation utilizing the Concrete Ready-mix Plant QC Workbook available from the MnDOT Concrete Engineering website. Electronically submit the QC Workbook to the Engineer by the Tuesday immediately following the previous week's production.

D7a Plant Certification

Before concrete production each season, ensure the producer performs the following:

(1) Performs an on-site inspection at the concrete plant with the Engineer who completes a MnDOT Form 2163, *Concrete Plant Contact Report.*
(2) Signs the report certifying compliance with the Certified Ready-Mix requirements and continual maintenance of the plant. The Engineer will also sign MnDOT Form 2163, *Concrete Plant Contact Report.*
(3) Provides a copy of the current MnDOT Concrete Manual and retain on-site.
(4) Equips the Certified Ready-Mix Plant with a working facsimile machine or an email address.
(5) Keeps plant reports, charts, and supporting documentation on file at the plant site for 5 calendar years.
(6) Provides electronic scales for weighing all materials.

D7b Sampling and Testing

Provide a MnDOT Certified Concrete Plant Level 2 Technician to oversee testing and plant operations and to remain on-site during concrete production or have cellular phone capability.

Provide facilities in accordance with 1604 for the use of the plant technician in performing tests.

Ensure the producer provides technicians with certification at least meeting MnDOT Concrete Plant Level 1 to perform all of the duties in accordance with the MnDOT Concrete Manual. The Engineer will provide technicians with certification at least meeting MnDOT Concrete Plant Level 1 to perform all of the duties in accordance with the MnDOT Concrete Manual.

Ensure the producer performs testing in accordance with the MnDOT Concrete Manual and determines testing rates meeting the requirements of the Schedule of Materials Control. The Engineer performs testing in accordance with the MnDOT Concrete Manual and determines testing rates meeting the requirements of the Schedule of Materials Control.

Take samples randomly using ASTM D 3665, Section 5.

Perform testing at the certified ready-mix plant site. Perform additional testing as directed by the Engineer. The Engineer may oversee the quality control sampling process.

Provide equipment and perform calibrations meeting the requirements of the following:

(1) AASHTO T 27, "Sieve Analysis of Fine and Coarse Aggregates,"
(2) AASHTO T 255, "Total Moisture Content of Aggregate by Drying,"
(3) AASHTO M 92, "Wire-cloth Sieves for Testing Purpose," and
(4) AASHTO M 231, "Weighing Devices Used in the Testing of Materials."

D7c Gradations and Aggregate Quality

Determine the gradation of the fine aggregates and the coarse aggregates as required by the Contract. Use mechanical shakers for sieve analysis of fine and coarse aggregates.

Identify quality control companion samples with the following information:

(1) Date,
(2) Test number,
(3) Time,
(4) Type of material,
(5) Plant, and
(6) Sampling location.

Document gradation results on MnDOT Form 2449, *Weekly Concrete Aggregate Report*.

Chart the results of all producer and Department gradation results of the coarse aggregate and the No. 8 **[2.36 mm]**, No. 30 **[600 µm]**, and No. 50 **[300 µm]** sieves of the fine aggregate.

The producer may request a reduction in testing rates as approved by the Engineer, in conjunction with the Concrete Engineer.

If the gradation tests on split samples from quality control or verification samples result in a variation between the producer and the Department greater than that set forth in the table below, the parties shall follow the procedures for test result dispute resolution available from the MnDOT Concrete Engineering website.

Allowable Variations on Percent Passing Sieves	
Sieve Size	**Allowed Percentage**
2 in **[50 mm]** – ⅜ in **[9.5 mm]**	± 6
No. 4 **[4.75 mm]** – No. 30 **[600 µm]**	± 4
No. 50 **[300 µm]**	± 3
No. 100 **[150 µm]**	± 2
No. 200 **[75 µm]**	± 0.6

D7c(1) Non-conforming Material

Only place concrete meeting the gradation requirements in the work. If the Contractor places concrete not meeting the gradation requirements into the work, the Engineer will not accept nonconforming concrete at the Contract unit price.

For concrete not meeting the required gradation, the Engineer will make determinations regarding the disposition, payment, or removal. The Department will adjust the Contract unit price for the Contract pay item of the concrete in accordance with Table 2461-9 and 2461-10. When there is not a separate Structural Concrete bid price for an item of work or the concrete is a minor component of the unit bid price, the Department will reduce payment based on a concrete price of $100.00 per cu. yd **[$130.00 per cu. m]** unless an invoice amount for the concrete in question is provided, whichever is greater.

Table 2461-7A **General Concrete for Individual Aggregate Fractions** **Fine and Coarse Aggregate Specification Sieves other than Fine Aggregate No. 200 [75 µm]**	
Outside of Specification, %	**Adjusted Contract Unit Price**
≤ 3	The Department will pay 98 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.
4 to 6	The Department will pay 95 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.

Table 2461-7A General Concrete for Individual Aggregate Fractions Fine and Coarse Aggregate Specification Sieves other than Fine Aggregate No. 200 [75 µm]	
Outside of Specification, %	**Adjusted Contract Unit Price**
7 to 10	The Department will pay 90 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.
> 10	The Department will pay 75 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.

Table 2461-7B General Concrete for No. 200 [75 µm] Sieve of Fine Aggregate	
Outside of Specification, %	**Adjusted Contract Unit Price**
≤ 0.3	The Department will pay 98 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.
0.4 to 0.6	The Department will pay 95 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.
0.7 to 1.0	The Department will pay 90 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.
> 1.0	The Department will pay for 75 percent of the relevant Contract unit price for concrete placed as approved by the Engineer.

If a failure occurs on the fine aggregate No. 200 **[75 µm]** sieve and on other sieves concurrently, the Department will only reduce the price based on the larger percentage deduction.

The Engineer, in conjunction with the Concrete Engineer, will determine adjusted Contract unit prices for coarse aggregate quality failures in accordance with 1503.

D7d Moisture Content

Ensure the producer performs the following:

(1) Determine the moisture content using the oven dry method in all fractions of the aggregate.
(2) Document moisture tests on MnDOT Form 2152, *Concrete Batching Report*.
(3) Chart the moisture content of each aggregate.

In addition to the oven dry moisture test, the producer may obtain the moisture content in the fine aggregate using a moisture probe.

To obtain approval for the use of a moisture probe, calibrate the moisture probe before each construction season meeting the requirements of the MnDOT Concrete Manual. Verify and chart both the probe moisture content and the oven-dry verification moisture test each week.

D7e Plant Diaries

Provide daily plant diaries in accordance with the MnDOT Concrete Manual using an approved form from the Department's website.

D7f Batch Weight Verification

The Engineer will observe the batching process to verify weights shown on the Certificate of Compliance.

The Engineer will observe the actual water batched during each collection of verification gradations in accordance with the following:

(1) Watching the ready-mix truck reverse the drum after washing,
(2) Verifying use of the current moisture test,
(3) Verifying that any additional water added to adjust the slump is recorded, and
(4) Validating water weights on the load batched and comparing the total water with the design water

The Engineer will document the actual water batched on MnDOT Form 24143, *Weekly Certified Ready-Mix Plant Report* and submit a copy to the Engineer to provide to the Concrete Engineer.

The Engineer will provide plant diaries in accordance with the MnDOT Concrete Manual.

D7g Certificate of Compliance

Provide a computerized Certificate of Compliance with each truckload of ready-mixed concrete at the time of delivery. The Department defines computerized to mean a document that records mix design quantities from load cells and meters.

If the computer that generates the Certificate of Compliance malfunctions, the Engineer may allow the Contractor to finish any pours in progress if the producer issues a handwritten MnDOT Form 0042, *Certificate of Compliance* with each load. Do not allow the producer to begin new pours without a working computerized Certificate of Compliance.

Provide a computerized Certificate of Compliance from the producer for each item of information, including the following:

(1) Name of the ready-mix concrete plant,
(2) Name of the Contractor,
(3) Date,
(4) State Project Number (SP) or (SAP),
(5) Bridge Number (when applicable),
(6) Time concrete was batched,
(7) Truck number,
(8) Quantity of concrete in this load,
(9) Running total of each type of concrete, each day for each project,
(10) Type of concrete (MnDOT Mix Designation Number),
(11) Cementitious materials using MnDOT Standard Abbreviations,
(12) Admixtures using MnDOT Standard Abbreviations
(13) Aggregate sources using 5 digit State Pit Numbers, and
(14) Admixture quantity fl. oz. per 100 pounds of cementitious **[mL per kg]** or oz per cu. yd **[mL per cu. m]**
(15) Batch information for materials using MnDOT standardized labels to represent each column shown in Table 2461-7C. Present the information in the order listed across the page (a through k) or print the information using two lines provided that the materials are identified in each line of information.

Table 2461-7C
Standardized Certificate of Compliance Labels

Category		Formula	Standard Label
a)	Ingredients (aggregate, cementitious, water, admixtures)	—	Ingredient
b)	Product Source (MnDOT Standard Abbreviation)	—	Source
c)	Total Moisture Factor (in decimals to 3 places)	—	MCFac
d)	Absorption Factor (in decimals to 3 places)	—	AbsFac
e)	MnDOT mix design oven dry (OD) weights, *lb/cu. yd [kg/cu. m]*	—	OD
f)	Absorbed moisture in the aggregates, *lb/cu. yd [kg/cu. m]*	(e × d)	Abs
g)	Saturated surface dry (SSD) weights for aggregates, *lb/cu. yd [kg/cu. m]*)	(e + f)	SSD
h)	Free moisture, *lb/cu. yd [kg/cu. m]*	(c - d) × e	Free Mst
i)	Target weights for one cubic yard [cubic meter] of concrete, *lb/cu. yd [kg/cu. m]*	(g + h)	CY Targ **[CM Targ]**
j)	Target batch weights, *lb [kg]*	(cu. yd × i) **[cu. m x i]**	Target
k)	Actual batch weights, *lb [kg]*	—	Actual

NOTE: Actual cubic yards **[cubic meters]** batched may vary due to differences in air content, weight tolerances, specific gravities of aggregates, and other variables.

(16) Total Water (Batch Water + Free Moisture) in pounds [kilograms]
(17) Water available to add [(Mix Design Water) × (Target CY (CM)) – Total water] in gallons **[liters]**
(18) Space to note the water adjustment information, including:
  (18.1) Water in gallons **[liters]** added to truck at plant filled in by producer, enter zero (0) if no water is added.
  (18.2) Water in gallons **[liters]** added to truck at the jobsite filled in by producer or Engineer, enter zero (0) if no water is added.
  (18.3) Total actual water in pounds **[kilogram]** (Total Water from Certificate of Compliance plus any additions).
(19) The following information printed with enough room beside each item to allow the Engineer to record the test results:
  (19.1) Air content,
  (19.2) Air temperature,
  (19.3) Concrete temperature,
  (19.4) Slump,
  (19.5) Cylinder number,
  (19.6) Location or part of structure,
  (19.7) Time discharged, and
  (19.8) Signature of Inspector.
(20) Location for the signature of the MnDOT Certified Plant 1 Technician representing the Producer. The technician will review the first Certificate of Compliance for each mix type, each day, for accuracy and hand sign the Certificate of Compliance at a location designated for signature signifying agreement to the terms of this policy and to certify that the materials itemized in the shipment comply with the specifications and plans.

D7h Decertification

If the Contractor provides concrete from a plant that cannot produce concrete that fails to perform testing, report accurate results, or complete required documentation, the Engineer may reject the concrete as unacceptable in accordance with 1503, "Conformity with Plans and Specifications" and 1512, "Unacceptable and Unauthorized Work.".

The Concrete Engineer, with coordination from the Engineer, may decertify the plant and halt production of concrete if the producer performs the following:

(1) Procedural changes made after the completion of the Concrete Plant Contact Report and after starting the work that cause non-compliance with the program,
(2) Continually produces concrete in non-compliance with this section,

(3) Completely disregards the requirements of this section, and
(4) Submits fraudulent test reports

If decertifying the plant, the Concrete Engineer may perform the following:
(1) Revoke plant certification.
(2) Revoke technician certification for individuals involved,
(3) Revoke bidding privileges as determined by the Construction Engineer, and
(4) Criminal prosecution for fraud as determined by the Attorney General.

S - 42 (2411) PREFABRICATED MODULAR GRAVITY BLOCK WALL (PMGBW)

This work consists of furnishing a submittal, materials, labor, construction, measurement, and other services necessary for construction of prefabricated gravity modular block walls with earth reinforcement (PMGBW) to confine slope material of the embankment. The work shall be performed in accordance with the applicable provisions of Mn/DOT 3149.2B2, 3126, 3137, these Special Provisions, and in close conformity with the lines, grades, standards, design, architectural details, and dimensions shown on the Plans or otherwise established. The work shall include:

1. Design calculations and working drawings.
2. Furnishing and installing the structural leveling pad (footing), precast concrete facing blocks, backfill, and soil reinforcement elements mechanically connected to the facing blocks.
3. The list of Pre-Qualified Prefabricated Modular Gravity Block Wall with Earth Reinforcement (PMBGW) may be viewed on the Mn/DOT website at: http://www.dot.state.mn.us/products/walls/pmgbw.html

s 42.1 Reference Manuals, Specifications and Standards:

The PMGBW system shall be designed, fabricated and constructed in accordance with these specifications and the following listed manuals and specifications:

1. Mn/DOT "Technical Memorandum: "08-11-MRR-02" and "08-06-MRR-01"
2. "Mn/DOT LRFD Bridge Design Manual".
3. Mechanically Stabilized Earth Walls and Reinforced Soil Slopes (RSS) design and Construction Guidelines, FHWA-NHI-00-43".
4. Mn/DOT Grading and Base Manual.
5. Mn/DOT Laboratory Testing Manual.
6. AASHTO LRFD Bridge Design Specifications or AASHTO Standard Specifications for Highway Bridges.
7. AASHTO LRFD Bridge Construction Specifications.
8. Mn/DOT Standard Specifications for Construction.
9. Mn/DOT Geotechnical Manual.
10. "Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes: FHWA-NHI-00-44".

s 42.2 Design Calcs and Dwgs Submittal

The Contractor for the PMGBW system shall submit a complete design computations and three sets of shop drawings to City for review. All drawings and computations shall be certified as being in compliance with these Special Provisions by an engineer who is currently licensed as a Registered Professional Engineer by the State of Minnesota and who is experienced in the design and construction of PMGBW. The engineer's experience shall include the design and construction of a minimum of five PMGBW systems of equivalent complexity and heights to the project being designed. The shop drawings shall comply with the design Plans, and shall include all details, dimensions, quantities, and any information required to layout and construct the wall.

Submittal:

The information shall include, but not be limited to, the following:

A. Plan drawings for each wall containing the following:
   1. Location relative to roadway centerline, bridges, piles, existing and other proposed retaining walls, beginning and ending stations, slopes, or other objects.
   2. Locations for all drainage structures, pipes, signs, light poles and other conflicting existing and planned structures as provided in the Contract documents.
   3. Limits of soil reinforcement and location where changes in length and/or size of reinforcement occur.
   4. Location of existing and planned utilities as provided in the Contract documents.
   5. Existing ground elevations.
   6. Limits for any construction constraints such as Right-of-Way, easements, staged construction, etc.

B. Typical cross section drawings for each wall identifying:
   1. Location and batter of the wall face.
   2. Wall treatment, including impervious geomembrane, traffic barrier(s), cast-in-place moment slab, runoff collection, subsurface and surface drainage, etc.
   3. Elevation of leveling pad.
   4. Reinforcement type, dimensions, and vertical spacing.
   5. Depth of embedment.
   6. Limits of excavation.
   7. Block joint cover location and generic material type.

C. Elevation views showing:
   1. Top and bottom wall elevations, in-place ground line, and finished grade elevation at top and bottom of wall.
   2. Details and dimensions for foundation and leveling pad, including steps in the footing or leveling pad.
   3. Location of drainage structures and construction details around these structures.
   4. Dimensions and locations of reinforcement.
   5. Maximum applied bearing pressure under the wall for each reinforcement length.
   6. Unit row and column numbers.
   7. Block configuration for standard and special cut units.
   8. Summary of quantities for each wall.
   9. Block dimensions and shape.

D. Horizontal and vertical curve data affecting the wall. Match lines or other details to relate wall stationing to centerline stationing.

E. Connection details and dimensions between concrete blocks, embedded devices and soil reinforcement.

F. Details for construction, including but not limited to:
   1. Termination at cast-in-place structures and any adjacent slope construction.
   2. Reinforcement placement around obstructions including light and sign supports.
   3. Block and soil reinforcement at corners.
   4. All internal drainage facilities.
   5. Other details such as coping or barrier, guardrail, fencing, or noise wall.
   6. Block slip joint details and nosing features.

G. Architectural details, including form liner pattern, joint layout and surface finish and color per the Plan.

H. Name of wall manufacturer and their QA/QC documents.

I. Test panel construction, when specified.

J. General notes required for constructing the wall:
   1. Design assumptions regarding material properties, material qualities and construction method.
   2. Wall layout information.
   3. Requirements for backfill compaction.
   4. Materials used in construction.

5. Geosynthetic filter fabric behind the joints.
6. Reinforcement handling, storage, preparation, and placement information and requirements.

K. Copy of calculations showing:
1. Table of contents page for design computations.
2. Design notes page with explanation of symbols and details of any computer programs used. Tabulate all calculated minimum factors of safety to ensure internal, external and global stability.
3. Block unit design including the design of reinforcement connectors and internal rebar.
4. Ultimate and allowable bearing pressures beneath the wall and the reinforced earth mass along with estimated settlements.
5. Rail/slab detail above wall, when applicable.
6. Stability analysis. This shall include external and internal stability, and applicable compound stability. Also, the designer shall perform global stability analysis if it is not provided in the geotechnical report.
7. Magnitude, direction, and location of the forces from any external loads such as traffic surcharge, lighting, signs, bridges, etc.
8. A set of project-typical hand calculations verifying the computer generated output.
9. Verification of the design properties/parameters from material tests. Include results from creep, durability, construction induced damage, junction strength tests, and any other applicable tests. Indicate the appropriate standardized test designation followed for each test.
10. All appropriate design computations.

s 42.3 Materials

All Materials for the wall system shall conform to requirements of these Special Provisions

A. Select Granular Fill:

Backfill material used in the retained zone shall comply with Mn/DOT Section 3137 Course Aggregate CA-3, Crushed Draining Stone

B. Soil Reinforcement:

Geogrid reinforcement will not be used in this gravity wall system, only backfill material as noted in section A. This is due to the limited workspace behind the wall area.

C. Connectors and Joint Materials:

1. Bearing pads shall be either: (i) EPDM rubber pads conforming to ASTM D 2000 M2AA 807, having a durometer hardness of 80 ±5, or (ii) high density polyethylene pads with a minimum density of 0.946 g/cm3 in accordance with ASTM D 1505. The bearing pads shall be used in all walls above 3.6 m (12 ft) height.
2. Joints shall be covered with a geotextile meeting the minimum requirements for filtration applications as specified by Mn/DOT 3733, Type 1 with minimum width and lap of 300 mm (12 inches) and shall be attached to the rear face of the wall by an adhesive (suitable for use on concrete surfaces in cold weather application) to insure that it doesn't move out of place during backfill operations.

D. Impervious Layer (when needed):

The impervious layer material shall be a puncture-hole free and flexible geomembrane.

E. Facing Blocks:

The precast concrete blocks shall be wet-cast and conform to the following requirements:

1. Steel connection elements, tie strip guides or other galvanized devices shall not contact or be attached to the facing panel reinforcement steel.

2. Block colors shall be consistent and free of stains, and units shall be free of defects, cracks or chips. Units that contain visible defects such as, but not limited to, vertical or horizontal seams, conspicuous stains, form marks or color streaks shall be repaired to the satisfaction of the Project Engineer or removed and replaced at the Contractor's expense.
3. All units shall be manufactured within the following tolerances:
   a. Lateral position of panel connection device shall be within 25 mm (1 inch). Embedment measured from the back face of the block shall be within +6 mm (1/4 inch), -13 mm (-1/2 inch). All other block dimensions shall be within 5 mm (3/16 inch).
   b. Squareness as determined by the difference between the two diagonals shall not exceed 13mm (½ inch).
   c. Surface defects on smooth formed surfaces measured over a length of 1.5 m (5 feet) shall not exceed 3 mm (1/8 inch).
4. The block shall be cast on a level surface and a random sample of the concrete shall be taken in accordance with AASHTO T141.
5. Concrete shall be Mix Number 3Y43. The plant and the QA/QC plan of the manufacturer shall be pre-qualified by Mn/DOT Office of Materials.
6. All units shall be handled, stored, and shipped in a manner to eliminate the risk of chipping, discoloration, cracks`, fracture, and excessive bending stresses. Units in storage shall be supported on firm blocking to protect the block connection devices and the exterior finish.

F. Rejection:

Blocks may be rejected because of failure to meet any of the requirements specified above. In addition, any or all of the following defects shall be sufficient cause for rejection:

2. Defects that indicate imperfect molding.
1. Bending or misalignment of connections.
2. Defects indicating honeycombing or open texture concrete.
3. Cracked or severely chipped blocks.
4. Color variation on front face of block due to excess form oil or other reasons.
5. Tie strips, connecting pins, PVC pipe, and lifting devices set to improper dimensions and tolerances shown on the Plans and specified above.

G. Acceptance of Material:

The Contractor shall furnish the Project Engineer a Certificate(s) of Compliance certifying the above materials comply with the applicable Contract specifications. A copy of all test results performed by the Contractor necessary to assure Contract compliance shall be furnished to the Project Engineer.

Acceptance shall be based on the Certificate(s) of Compliance, accompanying test reports, visual inspection, and/or any additional testing information requested by the Project Engineer. The Project Engineer retains the right to order /or perform independent tests to verify information.

s 42.4 Construction Requirements

A. General Requirements All PMGBW system-facing units shall be constructed in accordance with approved shop drawings, including the architectural features specified. The wall supplier shall provide a technical representative on the project site during the erection of the first full height section, and the following sections if needed until the Project Engineer determines that the Contractor has demonstrated the ability to construct the wall system without technical assistance. Also, the manufacturer's representative shall be available to provide instructions, guidance in pre-construction activities, and on-site technical assistance anytime during construction at no additional cost to Mn/DOT. Every step in the sequential construction of the PMGBW system shall comply with the construction requirements and tolerances. All instructions from the manufacturer shall be followed unless otherwise directed in writing by the Project Engineer.

B. Foundation Preparation: The following statements shall apply to Mn/DOT 2451: The foundation for the structure shall be graded level for a width equal to the length of the reinforcement element plus 500 mm (20 inches) or as shown on the Plans. Prior to wall construction and subsequent to clearing and grubbing per Mn/DOT 2101, any unsuitable foundation material shall be excavated and replaced with select granular fill per these Special Provisions, and compacted with a smooth wheel steel vibratory drum roller. All materials shall be compacted according to Mn/DOT 2451. The PMGBW system shall not bear directly on a rocky foundation or on bedrock. A minimum of 150 mm (6 inches) of select granular backfill shall be placed on the bedrock as bedding for the blocks. Compaction as specified above.

C. Backfill Placement: Backfill placement shall closely follow erection of each row of blocks. Backfill shall be placed in a way that does not cause damage or disturbance to the wall or soil reinforcement. Soil reinforcement shall be maintained in a horizontal position along its length. Soil reinforcement shall be placed perpendicular to the wall face, except as shown in the Plans. The backfilling and compaction operation shall comply with Mn/DOT 2451. Coarse filter aggregate used for drainage in the 1 ft distance behind the back face of the wall shall comply with Mn/DOT 3149.2H. Compaction within 1 m (3 feet) of the back face of the concrete blocks shall be achieved by means of a minimum of 3 passes with a lightweight mechanical tamper, roller, or vibratory system. The maximum lift size shall be 300 mm (1 foot). No drilling or pile driving through the reinforced backfill shall occur after placement of backfill. At the end of each day's operations, slope the last lift of backfill to direct surface runoff away from the wall. Do not allow surface runoff from adjacent areas to enter the wall construction area.

D. Structural Leveling Pad: The attached "PMGBW CONCRETE PAD DETAILS" shows the two options for the leveling pad gravel or concrete. The leveling pad shall be designed as footing. The minimum dimensions and other details are as shown in the plan. For walls greater than 12ft a 12-inch Crushed Stone CLASS II Aggregate Base leveling pad is required as incidental to the project.

E. Wall Erection: All PMGBW system-facing blocks shall be constructed in accordance with approved shop drawings, including the architectural features specified. Prefabricated blocks shall be placed so that their final position is vertical or battered as shown on the Plans. For erection, blocks shall be handled by means of lifting devices connected to the upper edge of the unit. Blocks shall be placed in successive horizontal lifts in the sequence shown on the Plans as backfill placement proceeds. Construction shall always begin from existing structures toward the open end of the wall. Wooden wedges shall maintain the position of blocks and their adjacent blocks shall be clamped together to prevent individual panel displacement. After setting the batter of the blocks, horizontal and vertical alignments shall be checked with surveying methods using suitable measuring points. External bracing shall be required for the initial lift. Storage, handling, and transportation shall avoid damage or discoloration of the blocks. Placement of a block on top of a block not completely backfilled shall not be permitted.
Soil reinforcement shall be placed in accordance with the Plans. Reinforcement shall generally be placed perpendicular to the back of wall. Pretension flexible reinforcement to remove any slack in the reinforcement. No alteration or cutting of reinforcement is permitted unless clearly detailed in the Plans. Connections must be made in accordance with the manufacturer's recommendations. Concrete facing vertical and horizontal alignment tolerances shall not exceed 6 mm per m (3/4 inch per 10 feet). The completed wall shall have overall vertical tolerance not to exceed 4 mm per m (½ inch per 10 feet). Reinforcement placement elevations shall not vary more than 25 mm (1 inch) from a horizontal line through the panel connection. Facing elements that are out of alignment shall not be pulled back into place.

F. Barriers and Copings Construction: This final construction sequence shall be undertaken after the final panels have been placed and the backfill has been completed to its final grade.

G. Measurement Method: PMGBW will be measured by the square meter (square yard) of face on a vertical plane between the leveling pad and a line indicating the top of wall, including wall cap or copings as required and shown on the Plans. Excavation and Backfill will be measured in accordance Mn/DOT 2451. Site preparation will be measured as specified in Mn/DOT 2101.

H. Finishes:

1. Retaining Wall Unit Face Texture and color shall be as natural limestone appearance, tan, matching the existing retaining wall located at the site.
2. All segmental masonry retaining walls shall have their surfaces sealed
3. Acceptable product stains include Sherwin Williams H & C SHIELD PLUS CONCRETE STAIN or TK Products TRI-SHEEN PIGMENTED STAIN TK-5272.
4. The Contractor shall comply with the manufacturer's written instructions for preparing, handling and applying the stain and surface sealer.

s 42.5 Drainage System - Subdrain Perforated Pipe shall be wrapped with Geotextile, Mn/DOT 3733, Type I. Fine Filter Aggregate Shall meet the requirements of Mn/DOT 3149.2J. Pipe shall generally be placed according to Plan details, but other configurations may be approved by the Engineer. Unless otherwise specified, subdrain grades shall not be less than 0.5%. At least 1' of subcut backfill shall be placed above the pipe before any compactive effort is applied.

s 42.6 Measurement and Payment

Excavation and Backfill will be measured in accordance Mn/DOT 2451 or 2411

Payment will be made under Item 2411.604 (Modular Block Wall Special) at the Contract bid price per square meter (square yard), which shall be compensation in full for all costs incidental thereto, including but not limited to, the PMGBW design, materials and construction. Materials include facing, reinforcement, attachment devices, joint materials, coping, leveling pad, and any other materials needed for the wall. Construction shall include compensation for all labor, technical representatives, and installed reinforcement strips or layers, wedges, bracing, storage, etc. The excavation and select backfill will be paid for as specified in Mn/DOT 2451 or 2411. Site preparation payment will be in accordance with Mn/DOT 2101

Item No.	Item	Unit
2411.511	STRUCTURE EXCAVATION CLASS U	C Y
2411.604	MODULAR BLOCK RETAINING WALL SPECIAL	S Y
2502.601	DRAINAGE SYSTEM	LS

S - 43 (S100 & 2501-6) STORM SEWER

This work consists of constructing storm sewers in accordance with the applicable MnDOT Standard Specifications and in accordance with The City of Rochester Standards for Street and Utility Construction:

s 43.1 **Sewer pipe and aprons** of each design designation will be measured by length along the line of pipe or each. Terminal points of measurement will be the pipe end at free outlets; the point of connection with inplace pipe; the center of manholes or catch basins; the point of centerline intersections at branch fittings; or the point of juncture with other appurtenances or units as defined

s 43.2 **Adjust Drainage Structure** Manholes to be adjusted from existing to proposed street elevation that can be accommodated by the addition or removal of adjusting rings, with a maximum of 12" of adjusting rings allowable, shall be considered under the pay item "Adjust Drainage Structure" and paid for accordingly.

s 43.3 **Adjust Frame and Ring** Catch Basins to be adjusted from existing to proposed street elevation that can be accommodated by the addition or removal of adjusting rings, with a maximum of 12" of adjusting rings allowable, shall be considered under the pay item "Adjust Frame & Ring Casting" and paid for accordingly.

s 43.4 **Reconstruct Drainage Structure** Structures to be adjusted from existing to proposed elevation that cannot be accommodated by the addition or removal of adjusting rings, or those manholes to be adjusted over 12" shall be considered under the pay item "Reconstruct Drainage Structure" and paid for accordingly.

s 43.5 **Construct Drainage Structure Design Spec** ___ of each design will be measured by number of each constructed complete-in-place, including the base, and casting, for the type structure stated in the proposal. Payment for constructing structures at the appropriate Contract prices will be compensation in full for all costs of the work.

s 43.6 **Connect into Existing Sewer** will be made by the number of connections constructed as specified. Payment will be at the Contract bid price per each, which shall be compensation in full for all costs incidental thereto, including but not limited to, all materials and labor necessary to connect the proposed sewer. Any damage caused to the existing sewer pipe shall be repaired at no expense to the Department and to the satisfaction of the Engineer.

s 43.7 **Basis of Payment**

Trenching, Bedding, Encasement and Backfill material for each type of pipe shall be according to the manufacturers' recommendations for pipe installations in a roadway section or T100, whichever is more stringent. All costs of furnishing and placing the pipe installation materials shall be considered incidental to the installation of the pipe.

Item No.	Item	Unit
2501.521	73" SPAN RC PIPE-ARCH CULV CL IIIA	L F
2501.525	73" SPAN RC PIPE-ARCH APRON	EACH
2503.511	12" RC PIPE SEWER CLASS V	L F
2503.511	15" RC PIPE SEWER CLASS III	L F
2503.602	CONNECT TO EXISTING STORM SEWER	EACH
2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH
2506.522	ADJUST FRAME & RING CASTING	EACH

S - 44 (S100 & 2503-6) SANITARY SEWER

This work shall consist of furnishing and installing sanitary pipe and fittings in accordance with the Plans, and in accordance with The City of Rochester Standards for Street Construction.

s 44.1 Maintenance of Service

Disruption of Sanitary flows during the construction of this project shall be kept to a minimum and considered incidental to the project.

Services shall not be disrupted for more than 4 hours. All service connection work will be accomplished and coordinated with the residences and businesses served. This may require temporary bypasses in these areas.

The City of Rochester and all affected property owners and residents shall be notified a minimum of 48 hours prior to disruption of service.

If the Contractor sequences the project so bypassing pumping is required the following provisions shall be followed. The Contractor shall submit a plan detailing the necessary bypasses needed for each stage of construction. Bypass pumping and piping, temporary wiring, and all other items are the responsibility of the Contractor. Contractor shall be responsible for setting up and maintaining bypass pumping operations. Contractor shall coordinate bypassing plan with Owner. Existing flows are not known.

s 44.2 **Sewer pipe** of each design designation will be measured by length along the line of pipe. Terminal points of measurement will be the point of connection with inplace pipe; the center of manholes; the point of centerline intersections at branch fittings; or the point of juncture with other appurtenances or units as defined

s 44.3 **Structures** of each design will be measured by number of each constructed complete-in-place, including the base, waterproofing, and castings as required, for the depth increments as stated in the proposal. Payment for constructing manholes at the appropriate Contract prices will be compensation in full for all costs of the work.

s 44.4 **Basis of Payment**

Trenching, Bedding, Encasement and Backfill material for each type of pipe shall be according to the manufacturers' recommendations for pipe installations in a roadway section or T100, whichever is more stringent. All costs of furnishing and placing the pipe installation materials shall be considered incidental to the installation of the pipe.

Item No.	Item	Unit
2503.511	8" DUCTILE IRON PIPE SEWER CL 52	L F
2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	EACH

S - 45 (W200 & 2504) WATERMAIN

This work shall consist of providing all labor, equipment, and materials to construct the watermain. All work shall be done in accordance with The City of Rochester Standards for Street Construction.

s 45.1 Maintenance of Service

Disruption of watermain flows during the construction of this project shall be kept to a minimum and considered incidental to the project.

All watermain disruptions shall be coordinated with City of Rochester Public Utilities.

Services shall not be disrupted for more than 4 hours. All service connection work will be accomplished and coordinated with the residences and businesses served. This may require temporary service connections in these areas.

The City of Rochester Public Utilities and all affected property owners and residents shall be notified a minimum of 48 hours prior to disruption of service.

s 45.2 Temporary Water System

The Contractor is required to provide a temporary water system during and incidental to the project. The temporary water system shall be phased in such a way that the residents will not remain on temporary water for the duration of the project.

All temporary piping shall meet the requirements of the Minnesota Department of Health and the National Sanitation Foundation Standard 61.

The Contractor is not allowed to provide temporary water service by connecting houses together with garden hoses. The temporary water system shall pass a bacteriological test in accordance with AWWA C 651, prior to the system being put into service each time it is set up. The temporary water system shall be connected to the houses via hose bibs. The residents should have new shut off valves inside their houses that can be turned off. If house doesn't have new shut off valve, contact RPU to resolve. If the hose bib has a back flow preventer, the Contractor shall remove and replace the hose bib.

s 45.3 **Hydrants** shall be constructed according to section W200 and the detail plate. Hydrant installation will be measured by the number of hydrants installed complete with gate valve and housing as specified. Payment will be made at the Contract bid price per each, which shall be compensation in full for all costs incidental thereto including, but not limited to any additional water leads, drain pits, concrete blocking, extensions, risers or fittings necessary to complete the new installation.

s 45.4 **4-12" Gate Valve and Box** shall be constructed according to section W200 and the detail plate. Measurement will be made by the number of valves and boxes installed as specified. Payment will be made at the Contract bid price per each, which shall be compensation in full for all costs incidental thereto to install the valve and box complete and inplace.

s 45.5 **4-12" Watermain** shall be constructed according to section W200 and the detail plate. Measurement shall be by the linear foot. This work includes, but is not limited to all materials necessary maintain service, excavation, bedding and backfill necessary to install the watermain.

s 45.6 Basis of Payment

Trenching, Bedding, Encasement and Backfill material for each type of pipe shall be according to the manufacturers' recommendations for pipe installations in a roadway section or T100, whichever is more stringent. All costs of furnishing and placing the pipe installation materials shall be considered incidental to the installation of the pipe.

Item No.	Item	Unit
2503.603	24" STEEL CASING PIPE	L F
2504.602	HYDRANT	EACH
2504.602	6" GATE VALVE AND BOX	EACH
2504.602	12" GATE VALVE AND BOX	EACH
2504.603	6" WATERMAIN DUCTILE IRON CL 52	L F
2504.603	12" WATERMAIN DUCTILE IRON CL 52	L F
2504.608	WATERMAIN FITTINGS	LB

S - 46 (2521) CONCRETE WALK

Concrete walk shall be performed in accordance with the provisions of MnDOT Section 2521 Rochester Detail Plate 2-13&14, and the following:

s 46.1 **Aggregates** for Concrete Walk and pedestrian ramps

The Contractor shall place a minimum of **4 inches** of compacted aggregate base Class 5 or 7C (in compliance with MnDOT 3137, and/or 3138), under all concrete walks constructed as an incidental expense to the walk.

s 46.2 **Item 2521.501 "__" Concrete Walk"** is provided for all sidewalk along the project corridor, excluding pedestrian ramps, driveways, exposed aggregate, and colored sidewalk areas.

s 46.3 **Item 2514.501 Concrete Slope Paving** is provided for 4 inches of concrete between and around the culvert aprons.

s 46.4 MnDOT 2521.3C3 is hereby modified to include the following provision:

After completing final finishing operations, cure all exposed concrete surfaces. Use one of the following curing methods:

(1) Place the membrane curing compound conforming to 3754 or 3755 within 30 minutes of concrete placement or once the bleed water has dissipated, unless the Engineer directs otherwise in accordance with 2521.3.E.1.a. Place the membrane curing compound on the edges within 30 minutes after permanent removal of the forms or curing blankets, unless the Contract requires otherwise.

(2) Place plastic curing blankets or completely saturated burlap curing blankets as soon as practical without marring the surface in accordance with 2521.3.E.1.b.

Failure to comply with these provisions will result in the Engineer applying a monetary deduction in accordance with 1503. When there is not a separate Contract unit price for Structural Concrete, the

Department will apply a monetary deduction of $50.00 per cu. yd [$65.00 per cu. m] or 50 percent of the Contractor-provided invoice amount for the concrete in question, whichever is less.

Whenever weather conditions are such as to cause unusual or adverse placing and finishing conditions, expedite the application of a curing method or temporarily suspend the mixing and placing operations, as the conditions require.

If necessary to remove the coverings to saw joints or perform other required work, and if the Engineer approves, remove the covering for the minimum time required to complete that work.

C3a Curing Methods

C3a(1) Membrane Curing Method

Before application, agitate the curing compound as received in the shipping container to obtain a homogenous mixture. Protect membrane curing compounds from freezing before application. Handle and apply the membrane curing compound in accordance with the manufacturer's recommendations.

Apply the curing compound with an approved airless spraying machine in accordance with the following

(1) At a rate of 1 gal per 150 sq. ft (1 L per 4 m^2) of surface curing area.

(2) Apply homogeneously to provide a uniform solid white opaque coverage on all exposed concrete surfaces (equal to a white sheet of typing paper). Some MnDOT approved curing compounds may have a base color (i.e. yellow) that cannot comply with the above requirement. In this case, provide a uniform solid opaque consistency meeting the intent of the above requirement.

(3) If the curing compound is damaged during the curing period, immediately repair the damaged area by re-spraying.

The Engineer will approve the airless spraying machine for use if it is equipped with the following:

(1) A re-circulating bypass system that provides for continuous agitation of the reservoir material,

(2) Separate filters for the hose and nozzle, and

(3) Multiple or adjustable nozzle system that provides for variable spray patterns.

If the Engineer determines that the initial or corrective spraying may result in unsatisfactory curing, the Engineer may require the Contractor to use the blanket curing method, at no additional cost to the Department.

C3a(2) Curing Blanket Method

After completion of the finishing operations and without marring the concrete, cover the concrete with curing blankets. Install in a manner that envelops the exposed concrete and prevents loss of water vapor. After the concrete has cured, apply membrane curing compound to the concrete surfaces that will remain exposed in the completed work.

C3b Protection Against Rain

Protect the concrete from damage due to rain. Have available, near the site of the work, materials for protection of the edges and surface of concrete. Should any damage result, the Engineer will suspend operations until the Contractor takes corrective action and may subject the rain-damaged concrete to 1503 and 1512.

C3c Protection Against Cold Weather

If the national weather service forecast for the construction area predicts air temperatures of 36 °F [1 °C] or less within the next 24 h and the Contractor wishes to place concrete, submit a cold weather protection plan.

Protect the concrete from damage including freezing due to cold weather. Should any damage result, the Engineer will suspend operations until corrective action is taken and may subject the damaged concrete to 1503 and 1512.

C3c(1) Cold Weather Protection Plan

Submit proposed time schedule and plans for cold weather protection of concrete in writing to the Engineer for acceptance that provides provisions for adequately protecting the concrete during placement and curing. Do not place concrete until the Engineer accepts the cold weather protection plans.

s 46.5 MnDOT 2521.3E is hereby deleted and replaced with following:

E Backfilling

Protect newly placed concrete from damage by adjacent vibratory or backfilling operations for a minimum of 24 hours. Perform vibratory operations and backfilling 72 hours after placing the concrete or after the concrete reaches a compressive strength of at least 3,000 psi [**20.7 Mpa**]. The Engineer will cast, cure, and test the concrete control specimens in accordance with 2461.3G5. If damage results from any of these operations the Engineer will suspend all operations until corrective action is taken and a new method is approved. The Engineer may subject damaged concrete to 1503 and 1512.

The Contractor may hand operate concrete consolidation equipment and walk behind vibratory plate compactors 24 hours after placing the concrete, and other equipment as approved by the Engineer in conjunction with the Concrete Engineer.

After curing, backfill or perform embankment construction to the elevations shown on the plans, without damaging the concrete. Use suitable grading materials from the excavation for backfill material in accordance with 2105, unless otherwise required by the Contract. Place and compact the backfill material in accordance with 2105.

Dispose of surplus excavated materials in accordance with 2105.

s 46.6 Measurement for concrete walk will be made by the top surface area in square feet as specified. The measurement will be taken from the outer most edge of the concrete walk. Payment will be made under Item 2521.501 (__" CONCRETE WALK) at the Contract bid price per square foot, which shall be payment in full for all costs involved.

ITEM	DESCRIPTION	UNIT
2514.501	CONCRETE SLOPE PAVING	S Y
2521.501	5" CONCRETE WALK	S F
2521.501	6" CONCRETE WALK	S F

S - 47 (2531) CONCRETE CURBING

The provisions of MnDOT 2531 are supplemented and/or modified with the following:

The spacing of contraction joints for curb and gutter shall be controlled by the proposed spacing of the transverse joints in the bituminous pavement. A contraction joint shall be provided at each transverse joint and intermediate joints shall be placed to provide intervals not greater than 10-ft (2.7m) nor less than 5-ft (1.5m).

Transverse expansion joints for curb and gutter shall be provided at 300-ft (90m) intervals as well as at structures and changes in alignment.

Metal reinforcement at catch basins shall be placed in accordance with Rochester Detail Plate 2-06. Furnishing and placing metal reinforcement shall be considered as incidental expense and no separate payment will be made therefore

s 47.1 The last paragraph of MnDOT 2531.3C shall be deleted and replaced with the following:

Longitudinal construction joints between a concrete median or gutter section and a concrete pavement shall not be sawed or sealed.

s 47.2 MnDOT 2531.3G is hereby modified to include the following provision:

After completing final finishing operations, cure all exposed concrete surfaces. Use one of the following curing methods:

(1) Place the membrane curing compound conforming to 3754 or 3755 within 30 minutes of concrete placement or once the bleed water has dissipated, unless the Engineer directs otherwise in accordance with 2521.3.E.1.a. Place the membrane curing compound on the edges within 30 minutes after permanent removal of the forms or curing blankets, unless the Contract requires otherwise..

(2) Place plastic curing blankets or completely saturated burlap curing blankets as soon as practical without marring the surface in accordance with 2521.3.E.1.b.

Failure to comply with these provisions will result in the Engineer applying a monetary deduction in accordance with 1503. When there is not a separate Contract unit price for Structural Concrete, the Department will apply a monetary deduction of $50.00 per cu. yd [$65.00 per cu. m] or 50 percent of the Contractor-provided invoice amount for the concrete in question, whichever is less.s.

Whenever weather conditions are such as to cause unusual or adverse placing and finishing conditions, expedite the application of a curing method or temporarily suspend the mixing and placing operations, as the conditions require.

If necessary to remove the coverings to saw joints or perform other required work, and if the Engineer approves, remove the covering for the minimum time required to complete that work.

G1 Curing Methods

G1a Membrane Curing Method

Before application, agitate the curing compound as received in the shipping container to obtain a homogenous mixture. Protect membrane curing compounds from freezing before application. Handle and apply the membrane curing compound in accordance with the manufacturer's recommendations.

Apply the curing compound with an approved airless spraying machine in accordance with the following:

(1) At a rate of 1 gal per 150 sq. ft (1 L per 4 m^2) of surface curing area.

(2) Apply homogeneously to provide a uniform solid white opaque coverage on all exposed concrete surfaces (equal to a white sheet of typing paper). Some MnDOT approved curing compounds may have a base color (i.e. yellow) that cannot comply with the above requirement. In this case, provide a uniform solid opaque consistency meeting the intent of the above requirement.

(3) If the curing compound is damaged during the curing period, immediately repair the damaged area by re-spraying.

The Engineer will approve the airless spraying machine for use if it is equipped with the following:

(1) A re-circulating bypass system that provides for continuous agitation of the reservoir material,

(2) Separate filters for the hose and nozzle, and

(3) Multiple or adjustable nozzle system that provides for variable spray patterns.

If the Engineer determines that the initial or corrective spraying may result in unsatisfactory curing, the Engineer may require the Contractor to use the blanket curing method, at no additional cost to the Department.

G1b Curing Blanket Method

After completion of the finishing operations and without marring the concrete, cover the concrete with curing blankets. Install in a manner that envelops the exposed concrete and prevents loss of water vapor.

After the concrete has cured, apply membrane curing compound to the concrete surfaces that will remain exposed in the completed work.

G2 Protection Against Rain

Protect the concrete from damage due to rain. Have available, near the site of the work, materials for protection of the edges and surface of concrete. Should any damage result, the Engineer will suspend operations until the Contractor takes corrective action and may subject the rain-damaged concrete to 1503 and 1512.

G3 Protection Against Cold Weather

If the national weather service forecast for the construction area predicts air temperatures of 36 °F [1 °C] or less within the next 24 h and the Contractor wishes to place concrete, submit a cold weather protection plan.

Protect the concrete from damage including freezing due to cold weather. Should any damage result, the Engineer will suspend operations until corrective action is taken and may subject the damaged concrete to 1503 and 1512.

G3a Cold Weather Protection Plan

Submit proposed time schedule and plans for cold weather protection of concrete in writing to the Engineer for acceptance that provides provisions for adequately protecting the concrete during placement and curing. Do not place concrete until the Engineer accepts the cold weather protection plans.

s 47.3 MnDOT 2531.3J is hereby deleted and replaced with the following:

J Backfilling

Protect newly placed concrete from damage by adjacent vibratory or backfilling operations for a minimum of 24 hours. Perform vibratory operations and backfilling 72 h after placing the concrete or after the concrete reaches a compressive strength of at least 3,000 psi [**20.7 Mpa**]. The Engineer will cast, cure, and test the concrete control specimens in accordance with 2461.3G5. If damage results from any of these operations the Engineer will suspend all operations until corrective action is taken and a new method is approved. The Engineer may subject damaged concrete to 1503 and 1512.

The Contractor may hand operate concrete consolidation equipment and walk behind vibratory plate compactors 24 hours after placing the concrete, and other equipment as approved by the Engineer in conjunction with the Concrete Engineer.

After curing, backfill or perform embankment construction to the elevations shown on the Plans , without damaging the concrete. Use suitable grading materials from the excavation for backfill material in accordance with 2105, unless otherwise required by the Contract. Place and compact the backfill material in accordance with 2105.

Dispose of surplus excavated materials in accordance with 2105.

ITEM	DESCRIPTION	UNIT
2531.501	CONCRETE CURB & GUTTER DESIGN B624	L F

S - 48 (2531) CONCRETE DRIVEWAY PAVEMENT

Concrete walk shall be performed in accordance with the provisions of Mn/DOT Section 2531 except as modified below:

s 48.1 The Contractor shall place a minimum of **4 inches** crushed rock base under all driveways and associated sidewalk section through the driveway. Furnishing and placing the crushed rock base will be considered incidental to the pavement construction and no separate payment will be made therefore.

s 48.2 Saw cutting shall be considered incidental to concrete pavement.

Item No.	Item	Unit

2531.507 __" CONCRETE DRIVEWAY PAVEMENT ..... S Y

S - 49 (2554) INSTALL GUARDRAIL

This work shall consist of installing guardrail salvaged elsewhere under this Contract in accordance with the following:

s 49.1 Method of Measurement

Measurement will be made by the length in **linear feet** of guardrail installed complete in place as specified.

s 49.2 Basis of Payment

Payment will be made under Item 2554.603 (INSTALL GUARDRAIL) at the Contract bid price per **linear foot**, which shall be compensation in full for all costs incidental thereto, including but not limited to: 1) installing guardrail components removed and salvaged elsewhere under this Contract in the new locations as specified, and 2) furnishing and installing any other new guardrail components as may be required for the complete installation, in addition to those materials available from the salvage operations.

Item No.	Item	Unit
2554.603	INSTALL GUARDRAIL	L F

S - 50 (2573) TEMPORARY EROSION CONTROL AND TURF ESTABLISHMENT

Temporary Erosion Control and Turf Establishment shall be performed in accordance with the provisions of MnDOT Section 2573 except as modified below:

s 50.1 **Perimeter Control:** shall be installed prior grubbing to control sediment from leaving the project limits, and entering a critical resource. This work shall include furnishing, installing, and removing silt fence, or biorolls (installation of biorolls shall include staking or weighting with sandbags to prevent movement) in accordance with the details shown in the Plans and the applicable Mn/DOT Standard Specifications.

s 50.2 **Inlet Protection:** shall be furnished and installed on all inlets discharging to surface water. Inlets in rough graded areas need protection to keep any sediment from being transported to a Water of the State, or filling up the pipes with sediment. Inlet protection is shown in the plans by type; see specification 3891. Devices approved by the MN/Department's Erosion Control Engineering Unit and on file on the web under the Materials Engineering Section's Approved Products List can be furnished as meeting this specification requirement.

s 50.3 **Temporary Rock Construction Entrance** shall be installed prior to construction, to control sediment from leaving the project limits. This work shall include furnishing, installing, maintaining, and removing the entrance in accordance with the details shown in the Plans and the applicable Mn/DOT Standard Specifications.

s 50.4 **Inlet Protection**: shall be furnished and installed on all inlets discharging to surface water. Inlets in rough graded areas need protection to keep any sediment from being transported to a Water of the State, or filling up the pipes with sediment. Inlet protection is shown in the plans by type; see specification 3891. Devices approved by the MN/Department's Erosion Control Engineering Unit and on file on the web under the Materials Engineering Section's Approved Products List can be furnished as meeting this specification requirement.

Bidders are advised that payment for furnishing and installing temporary erosion control set forth in the foregoing area is for the initial installation and removal only. Any replacement components as may be necessary to maintain the temporary erosion control devices in a functional condition, to the satisfaction of the Engineer, during the tenure of this Contract shall be furnished, installed, maintained, and removed at the Contractor's expense.

Item No.	Item	Unit
2573.502	SILT FENCE, TYPE MACHINE SLICED	L F
2573.505	FLOTATION SILT CURTAIN TYPE STILL WATER	L F

2573.530 STORM DRAIN INLET PROTECTION .....EACH

S - 51 (2575) PERMANENT EROSION CONTROL AND TURF ESTABLISHMENT

The provisions of MnDOT 2575 are supplemented and/or modified with the following:

s 51.1 **Disturbed areas,** as shown in the plans, shall be sodded or seeded and mulched as soon as practical after completion of the grading operations, but within the period specified for germination of seed.

s 51.2 **Topsoil:** Topsoil should be at a minimum of 6 inches on seeded areas and 3 inches thick on sodded areas. This material should have been retained on the project included in the common excavation item.

s 51.3 **Sod**:

Sodding around storm aprons, shall be according to MnDOT Detail Plate 9102D and shown on the Plans; According to the requirements of MnDOT 3878.2, B **"Erosion Control Sod"**.

Sodding around other areas shall be as shown on Plans; According to the requirements of MnDOT 3878.2, D **"Mineral Sod"**.

s 51.4 **Seed**:

Seed should be installed by hydro-seeding it evenly over the areas shown in the plans. A fan-type nozzle should be used with approximately 500 gallons of water per acre. It is recommended to add approximately 75 pounds of hydromulch per 500 gallons of water for a visual tracer to ensure uniform coverage.

Note: When seeding in conjunction with a hydraulic soil stabilizer (bonded fiber matrixes (BFM's), hydro-mulches, etc., it is recommended that a two-step operation be used. Seed should be placed first and the hydraulic soil stabilizer be applied afterwards. This is to ensure that seed comes into direct contact with the soil.

Rates are specified in the turf establishment table for the specified mix.

Turf Establishment Table

	Purpose	Mixture	Seeding Rate (lbs/acre)	Fertilizer Rate (lbs/acre)
Sod	Erosion Control			200
	Mineral			**200**
General	Roadside	250	70	300
	Commercial Turf	260	125	300
	Residential Turf	270	150	300
Native	Ponds & Wet Area- Tall Grasses	310	82	350
	Sandy/dry Areas- Short Grasses	330	84.5	350
	Sandy/dry Areas- Mid Grasses	**340**	**84.5**	**350**
	General Roadside	350	84.5	350
	Sedge/Prairie Meadow	325	84	350
	Floodplain	328	88	350

The site should be harrowed, cultipacked or raked following seeding.

s 51.5 **Fertilizer: Type 3** Slow Release Nitrogen Fertilizer used for this project shall be 22-5-10, 80% W.I.N, 0% Cl. Rates are specified in the turf establishment table for the specified mix.

s 51.6 **Hydraulic soil stabilizers / Mulch Type 6** Hydraulic Soil Stabilizer applied at 3,500 pounds per acre on all seeded areas. According to the requirements of Mn/DOT 3884.

s 51.7 **Watering:**

The Contractor shall make, at no cost to the Owner, whatever arrangements may be necessary to insure an adequate supply of water to meet the needs of this Contract. The Contractor shall also furnish all necessary hose, equipment, attachments, and accessories for the adequate irrigation of lawns and planted areas as may be required to complete the work as specified and water used for this purpose shall be incidental to the cost of the turf establishment.

s 51.8 **Erosion Control Blanket: Category 3** on slopes 1:2 and steeper. Also ditch bottoms greater than 2%. Maintenance is included with the blanket see specification 2575.3 L2.

s 51.9 **Watering:**

The Contractor shall make, at no cost to the Owner, whatever arrangements may be necessary to insure an adequate supply of water to meet the needs of this Contract. The Contractor shall also furnish all necessary hose, equipment, attachments, and accessories for the adequate irrigation of lawns and planted areas as may be required to complete the work as specified and water used for this purpose shall be incidental to the cost of the turf establishment.

s 51.10 **Basis of Payment**

Item No.	Item	Unit
2575.502	SEED MIXTURE 350	LB
2575.505	SODDING TYPE MINERAL	S Y
2575.523	EROSION CONTROL BLANKETS CATEGORY 3	S Y
2575.532	FERTILIZER TYPE 3	LB
2575.604	SEEDING	S Y

S - 52 (3137) COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE

MnDOT 3137 shall be deleted and replaced with the following:

3137.1 SCOPE

Provide coarse aggregate for use in portland cement concrete.

3137.2 REQUIREMENTS

A General

Provide coarse aggregate consisting of clean, sound, durable particles, uniform in quality, and free from wood, bark, roots, and other deleterious material.

The Engineer, in conjunction with the Concrete Engineer, may consider the following as the basis for acceptance of coarse aggregate for portland cement concrete:

(1) Results of laboratory tests,

(2) Behavior under natural exposure conditions,

(3) Behavior of other portland cement concrete with aggregate from the same or similar geological formations or deposits, and

(4) Any other tests or criteria as deemed appropriate by the Engineer, in conjunction with the Concrete Engineer.

B Classification

Provide coarse aggregate meeting the requirements of one of the following classifications:

(1) Class A: Crushed quarry rock including quartzite, gneiss, and granite, or mine trap rock including basalt, diabase, gabbro, and other igneous rock types. Class A aggregate may contain no greater than 4.0 percent non-Class A aggregate. The Department will not allow the intentional blending or adding of non-Class A aggregate.

(2) Class B: All other crushed quarry or mine rock types including carbonates, rhyolite, and schist.

(3) Class C: Natural or partly crushed gravel obtained from a natural gravel deposit.

(4) Class D: Mixture of at least two classes of coarse aggregate. The Engineer, in conjunction with the Concrete Engineer, will determine the suitability of the Class D aggregate for the proposed use including proportioning.

(5) Class R: Aggregate obtained from recycling concrete. The Engineer, in conjunction with the Concrete Engineer, will determine the suitability of the Class R aggregate for the proposed use including proportioning.

C Washing

Wash Class B, Class C, Class D, and Class R coarse aggregate. Wash Class A aggregate as needed to comply with the requirements of Table 3137-1.

D Quality

Quality requirements are based on each individual aggregate fraction unless otherwise allowed by the Engineer, in conjunction with the Concrete Engineer with the exception of the following:

(1) When 100 percent of the fractions from a single source pass the 1 in [**25 mm**] sieve, quality requirements are based on the composite value of the combined aggregates.

(2) When less than 100 percent of the fractions from a single source pass the 1 inch [**25 mm**] sieve:

(a) Those fractions passing the 1 inch [**25 mm**] sieve are combined and based on the composite value;

(b) The fractions greater than or equal to 1 inch [**25 mm**] are based on each individual aggregate fraction.

D1 Coarse Aggregate for General Use

Provide coarse aggregate for general use concrete in accordance with Table 3137-1.

Table 3137-1
Coarse Aggregate for General Use

	Quality Test	Maximum Percent by Weight
(a)	Shale:	
	Fraction retained on the ½ in [**12.5 mm**] sieve	0.4
	Fraction retained on the No. 4 [**4.75 mm**] sieve, as a percentage of the total material	0.7
(b)	Soft iron oxide particles (paint rock and ochre)	0.3
(c)	Total spall materials*:	
	Fraction retained on the ½ in [**12.5 mm**] sieve	1.0
	Fraction retained on the No. 4 [**4.75 mm**] sieve, as a percentage of the total material	1.5
(d)	Soft particles‖	2.5
(e)	Clay balls and lumps	0.3
(f)	Sum of (c) total spall materials, (d) soft particles, and (e) clay balls and lumps†	3.5
(g)	Slate	3.0
(h)	Flat or elongated pieces‡	15.0
(i)	Quantity of material passing No. 200 [**75 µm**] sieve:	
	Class A and Class B aggregates#	1.5
	Class C and Class D aggregates§	1.0
(j)	Los Angeles Rattler, loss on total sample	40.0
(k)	Soundness of magnesium sulfate**	15.0

* Includes the percentages retained by shale and soft iron oxide particles, plus other iron oxide particles, unsound cherts, pyrite, and other materials with similar characteristics.

‖ Exclusive of shale, soft iron oxide particles, and total spall materials.

† Sum of the total spall materials, soft particles, and clay balls and lumps. For total spall materials, use the percent in the total sample retained on the No. 4 [**4.75 mm**] sieve.

‡ Thickness less than 25 percent of the maximum width. Length greater than 3 times the maximum width.

\# Each individual fraction at the point of placement consists of dust from the fracture and free of clay or shale.

§ For each individual fraction at the point of placement.

** Loss at 5 cycles for any fraction of the coarse aggregate. Do not blend materials from multiple sources to obtain a fraction meeting the sulfate soundness requirement.

D2 Coarse Aggregate for Bridge Superstructure

Provide coarse aggregate in accordance with 3137.2D1 except as modified by Table 3137-2 for use in the following:

(1) Bridge superstructure (deck, railing, posts, curbs, sidewalks, and median strips);

(2) Approach panels; and

(3) Precast concrete panel facings for Mechanically Stabilized Earth walls.

Table 3137-2
Coarse Aggregate for Bridge Superstructure

	Quality Test	Maximum Percent by Weight
(a)	Shale:	
	Fraction retained on the ½ in [**12.5 mm**] sieve	0.2
	Fraction retained on the No. 4 [**4.75 mm**] sieve as a percentage of the total material	0.3
(b)	Soft iron oxide particles (paint rock and ochre)	0.2
(c)	Total spall materials*:	
	Fraction retained on the No. 4 [**4.75 mm**] sieve as a percentage of the total material	0.5
(d)	Soft particles ‖	2.5
(e)	Clay balls and lumps	0.3
(f)	Sum of (c) total spall materials, (d) soft particles, and (e) clay balls and lumps, use the percent in the total sample retained on the No. 4 [**4.75 mm**] sieve	3.0
(g)	Absorption for Class B aggregate	1.75
(h)	Carbonate in Class C and Class D aggregates by weight	30.0

* Includes the percentages retained by shale and soft iron oxide particles, plus other iron oxide particles, unsound cherts, pyrite, and other materials with similar characteristics.

‖ Exclusive of shale, soft iron oxide particles, and total spall materials.

† Sum of the total spall materials, soft particles, and clay balls and lumps. For total spall materials, use the percent in the total sample retained on the No. 4 [**4.75 mm**] sieve.

D3 Coarse Aggregate for Concrete Pavement

Provide coarse aggregate in accordance with 3137.2D1, except as modified by Table 3137-3, for use in the following:

(1) Concrete pavement, and

(2) Concrete pavement rehabilitation.

Table 3137-3 Coarse Aggregate for Concrete Pavement		
Quality Test		**Maximum Percent by Weight**
(a)	Absorption for Class B aggregate	1.75
(b)	Carbonate in Class C aggregate by weight	30.0

E Gradation

Provide coarse aggregate in accordance with Table 3137-4 including all sizes within the specified limits. The Department defines coarse aggregate as the uniform product of the producing plant, unless some sizes are removed to meet the gradation requirements. Do not use broken or noncontinuous gradations.

If the coarse aggregate has less than 100 percent passing the 1 in **[25 mm]** sieve, proportion the coarse aggregate using at least two fractions. Gradation requirements are based on the composite value of the combined coarse aggregates.

Table 3137-4
Coarse Aggregate Designation for Concrete,
percent by weight passing square opening sieves

Aggregate	2 in [50 mm]	1½ in [37.5 mm]	1¼ in [31.5 mm]	1 in [25.0 mm]	¾ in [19.0 mm]	⅝ in [16.0 mm]	½ in [12.5 mm]	⅜ in [9.5 mm]	No.4 [4.75 mm]
CA-00	—	—	—	100	95 – 100	—	—	—	0 – 10
CA-15	100	95 – 100	—	—	35 – 65	—	—	5 – 25	0 – 7
CA-25	100	95 – 100	—	—	50 – 80	—	—	20 – 40	0 – 7
CA-35	—	100	95 – 100	—	55 –85	—	—	20 – 45	0 – 7
CA-45	—	—	100	95 – 100	65 – 95	—	—	25 – 55	0 – 7
CA-50	—	—	—	100	85 – 100	—	—	30 – 60	0 – 12
CA-60	—	—	—	—	100	85 – 100	—	40 – 70	0 – 12
CA-70	—	—	—	—	—	100	85 – 100	50 – 100	0 – 25
CA-80*	—	—	—	—	—	—	—	100	55 – 95

* Do not allow greater than 5 percent to pass the No. 50 [300 µm] sieve.

If producing Class R aggregate, remove reinforcing steel from the concrete and any concrete material passing the No 4 **[4.75 mm]** sieve.

3137.3 SAMPLING AND TESTING

Sample and test coarse aggregate fractions separately in accordance with Table 3137-5.

Table 3137-5 Preliminary Coarse Aggregate Testing	
Aggregate	**Notification and Testing Requirement**
New source	Notify the Engineer at least 1 month before use. Perform new source concrete

	aggregate testing in accordance with the procedure on the Department's website.
Previously tested aggregate	Notify the Engineer at least 2 weeks before use. Perform additional testing as directed by the Engineer, in conjunction with the Concrete Engineer.

Sample and test coarse aggregate in accordance with Table 3137-6.

Table 3137-6
Coarse Aggregate Test Methods

Test	Testing Method
Sampling	MnDOT Concrete Manual
Sieve analysis	MnDOT Concrete Manual
Shale test	MnDOT Laboratory Manual 1207
Quantity of material passing the No. 200 [**75 µm**] sieve	MnDOT Concrete Manual
Specific gravity and absorption	MnDOT Laboratory Manual 1204
Density	AASHTO T 19 or MnDOT Laboratory Manual 1211
Los Angeles Rattler loss	AASHTO T 96
Void content	AASHTO T 19* or MnDOT Laboratory Manual 1211
Deleterious materials	MnDOT Laboratory Manual 1209
Soundness; magnesium sulfate	MnDOT Laboratory Manual 1219
Soft particles	MnDOT Laboratory Manual 1218
Flat or elongated pieces	ASTM D 4791
Clay balls or lumps	MnDOT Concrete Manual

* Base the void content on an oven-dry and compacted-by-rodding condition of the aggregate and a value of 62.4 lb per cu. ft [**1,000 kg per cu. m**] for water.

S - 53 (3138) AGGREGATES FOR SURFACE AND BASE COURSES

The provisions of MnDOT 3138 are hereby modified as follows:

s 53.1 If crushed carbonate quarry rock (limestone or dolostone) is used, the minus 75 µm [**#200**] sized portion of the rock insoluble residue shall not exceed 10% by weight for Base Course and Shoulder Aggregate only. The insoluble residue test procedure is on file in the MnDOT Materials Laboratory.

s 53.2 Blending of sources and/or beds with an insoluble residue up to 15% is allowed to meet the 10% insoluble residue requirement. Individual beds thinner than 150 mm [**6 inches**] up to 5% of the total face height, are exempt from the 15% maximum insoluble residue requirement. However, the aggregate producer shall practice good quality control at all times and exclude poor quality stone to the extent practical, regardless of the bed thickness and/or pocket size and location.

s 53.3 No carbonate quarry rock from the Platteville Geological Formation is allowed.

s 53.4 The second paragraph of MnDOT 3138.2B Gradation Tables 3138-1 and 2, is revised to read as follows:

If Class 7 is substituted for Classes 1, 3, 4, 5, or 6, it shall meet the gradation requirements of the substituted class (Table 3138-1); except that, for Class 5 and 6, up to 5 percent by mass **(weight)** of the total composite mixture may exceed 25.0 mm (**1 inch**) sieve but 100 percent must pass the 37.5 mm (**1.5 inch**) sieve. Surfacing aggregate mixtures containing salvaged materials shall meet the gradation requirements of the materials specified in the Plan. All gradations will be run on the composite mixture before extraction of the bituminous material.

s 53.5 TABLE 3138-1 in MnDOT 3138.2B Gradation Tables 3138-1 and 2, is hereby deleted and replaced with the following:

TABLE 3138-1
BASE AND SURFACING AGGREGATE
Total Percent Passing

Sieve Size	Class 1 **(A)**	Class 2	Class 3 **(A)**	Class 4 **(A)**	Class 5 **(A) (B)**	Class 6 **(A) (B)**
75 mm (3 inches)	--	--	--	--	--	--
50 mm (2 inches)	--	--	100	100	--	--
37.5 mm (1½ inches)	--	--	--	--	--	--
25.0 mm (1 inch)	--	--	--	--	100	100
19.0 mm (3/4 inch)	100	100	--	--	90-100	90-100
9.5 mm (3/8 inch)	65-95	65-90	--	--	50-90	50-85
4.75 mm (No. 4)	40-85	35-70	35-100	35-100	35-80	35-70
2.00 mm (No. 10)	25-70	25-45	20-100	20-100	20-65	20-55
425 µm (No. 40)	10-45	12-30	5-50	5-35	10-35	10-30
75 µm (No. 200)	8.0-15.0	5.0-13.0	5.0-10.0	4.0-10.0	3.0-10.0	3.0-7.0

(A) When salvaged materials are substituted for another class of aggregate, it shall meet the gradation requirements of the class being replaced except as amended in 3138.2 B.

(B) The gradation requirements for aggregates containing 60% or more crushed quarry rock may be amended with the concurrence of the Project Engineer and the Grading and Base Engineer.

s 53.6 The fifth paragraph of MnDOT 3138.3 Sampling and Testing, is revised to read as follows:

The stockpile shall be sampled at the rate of one field gradation test per 1,000 metric tons **(tons)** of aggregate used on the Project.

S - 54 (3139) (D6) GRADED AGGREGATE FOR BITUMINOUS MIXTURES

MnDOT 3139 is hereby deleted and replaced with the following:

3139 Graded Aggregate for Bituminous Mixtures

3139.1 Scope

Provide graded aggregate for use in bituminous mixtures.

3139.2 PLANT MIXED ASPHALT Requirements

A Composition

Provide graded aggregate composed of any combination of the following sound durable particles as described in 3139.2B.

Do not use graded aggregate containing objectionable materials including:

(1) Metal,

(2) Glass,

(3) Wood,

(4) Plastic,

(5) Brick, or

(6) Rubber.

Provide coarse aggregate free of coatings of clay and silt.

Do not add soil materials such as clay, loam, or silt to compensate for a lack of fines in the aggregate.

Do not blend overburden soil into the aggregate.

Feed each material or size of material from an individual storage unit at a uniform rate.

Do not place blended materials from different sources, or for different classes, types, or sizes together in one stockpile unless approved by the Engineer as a Class E aggregate.

B Classification

B.1 Class A

Provide crushed igneous bedrock consisting of basalt, gabbro, granite, gneiss, rhyolite, diorite, and andosite. Rock from the Sioux Quartzite Formation may contain no greater than 4.0 percent non-Class A aggregate. Do not blend or add non-Class A aggregate to Class A aggregate.

B.2 Class B

Provide crushed rock from other bedrock sources such as carbonate and metamorphic rocks (Schist).

B.3 Class C

Provide natural or partly crushed natural gravel obtained from a natural gravel deposit.

B.4 Class D

Provide 100 percent crushed natural gravel produced from material retained on a square mesh sieve with an opening at least twice as large as Table 3139-2 allows for the maximum size of the aggregate in the composite asphalt mixture. Ensure the amount of carryover, material finer than the selected sieve, no greater than 10 percent of the Class D aggregate by weight.

B.5 Class E

Provide a mixture consisting of at least two of the following classes of approved aggregate:

(1) Class A,

(2) Class B, and

(3) Class D.

B.6 Steel Slag

Steel slag cannot exceed 25% of the total mixture aggregate and be free from metallic and other mill waste. The Engineer will accept stockpiles if the total expansion is no greater than 0.5 percent as determined by ASTM D 4792

B.7 Taconite Tailings

Obtain taconite tailings from ore mined westerly of a north-south line located east of Biwabik, Minnesota (R15W-R16W) or from ore mined in southwestern Wisconsin.

B.8 Recycled Asphalt Shingles (RAS)

Provide recycled asphalt shingles manufactured from waste scrap asphalt shingles (MWSS) or from tear-off scrap asphalt shingles (TOSS). Consider the percentage of RAS used as part of the maximum allowable Recycled Asphalt Pavement (RAP) percentage. See Table 3139-3.

B.8.A RAS Gradation.....MnDOT Laboratory Procedure 1801

Provide RAS in accordance with the following gradation requirements:

Table 3139-1
RAS Gradation

Sieve size	Percent passing
½ in [12.5 mm]	100
No. 4 [4.75 mm]	90

B.8.B Binder Content

Determine the binder content using chemical extraction meeting the requirements of MnDOT Lab Procedure 1851 or 1852.

B.8.C Bulk Specific Gravity

The Contractor may use an aggregate bulk specific gravity (Gsb) of 2.650 in lieu of determining the shingle aggregate Gsb in accordance with MnDOT Lab Procedure 1205.

B.8.D Waste Materials

Do not allow extraneous materials including metals, glass, rubber, nails, soil, brick, tars, paper, wood, and plastics greater than 0.5 percent by weight of the graded aggregate as determined by material retained on the No. 4 [4.75 mm] sieve as specified in MnDOT Laboratory Procedure 1801.

B.8.E Stockpile

Do not blend an RAS stockpile with other salvage material. Do not blend MWSS and TOSS. The Contractor may blend virgin sand material with RAS to minimize agglomeration if the Contractor accounts for the blended sand in the final mixture gradation.

B.8.F Certification

Ensure the processor provides RAS certification on the following Department form "Scrap Asphalt Shingles from Manufacture Waste" or "Tear-Off Scrap Asphalt Shingles" at www.dot.state.mn.us/materials/bituminous.html.

B.9 Crushed Concrete and Salvaged Aggregate

The Contractor may incorporate no greater than 50 percent of crushed concrete and salvaged aggregate in non-wear mixtures. Do not use crushed concrete in wearing courses.

B.10 Ash

Sewage sludge ash and waste incinerator ash are allowed as an aggregate source at a maximum of 5% of the total weight of the mixture. Only use sewage sludge ash meeting the requirements of the Tier II hazard evaluation criteria as approved by the Engineer with concurrence with MnDOT's Environmental Assessment Engineer in the mixture. Only use waste incinerator ash sources approved by the Engineer with concurrence with MnDOT's Environmental Assessment Engineer.

B.11 Recycled Asphalt Pavement (RAP)

B.11.A Aggregate Angularity

Provide combined RAP and virgin aggregates that meet the composite coarse and fine aggregate angularity for the mixture being produced.

B.11.B Objectionable Material

Do not use RAP containing objectionable materials including metal, glass, wood, plastic, brick, or rubber.

B.11.C Asphalt Binder Content

Determine the asphalt binder content using the MnDOT Lab Manual Method 1851 and 1852.

B.11.D Bulk Specific Gravity

Determine the bulk specific gravity in accordance with MnDOT Laboratory Procedure 1205 or 1815.

C Quality

C.1 Los Angeles Rattler Test.....MnDOT Laboratory Procedure 1210

Ensure a coarse aggregate loss no greater than 40 percent.

C.2 Soundness (Magnesium Sulfate).....MnDOT Laboratory Procedure 1219

Maximum loss after 5 cycles on the coarse aggregate fraction (material retained on No. 4 [4.75 mm] sieve for any individual source within the mix) as follows:

(1) Percent passing the ¾ in [19 mm] sieve to percent retained on the ½ in [12.5 mm] sieve, ≤ 14%,

(2) Percent passing the ½ in [12.5 mm] sieve to percent retained on the ⅜ in [9.5 mm]sieve, ≤18%,

(3) Percent passing the ⅜ in [9.5 mm] sieve to percent retained on the No. 4 [4.75 mm] sieve, ≤ 23%,

(4) For the composite if all three size fractions are tested, the composite loss ≤ 18%, and acceptance will be granted if:

(4.1) If the Contractor meets the composite requirement, but fails to meet at least one of the individual components, the Engineer may accept the source if each individual component is no greater than 110 percent of the requirement for that component.

(4.2) If the Contractor meets each individual component requirement, but fails to meet the composite, the Engineer may accept the source if the composite is no greater than 110 percent of the requirement for the composite.

Coarse aggregate that exceeds the requirements in this section for material passing the No. 4 [4.75 mm] sieve cannot be used.

C.3 Spall Materials and Lumps .....MnDOT Laboratory Procedure 1219

Stop asphalt production if the percent of spall or lumps measured in the stockpile or cold feed exceeds the values listed in Table 3139-3. Determine lump compliance by dry batching.

C.4 Insoluble Residue Test .....MnDOT Laboratory Procedure 1221

If crushed carbonate quarry rock (limestone or dolostone) is used the minus 75 µm [**#200**] sized portion of the rock insoluble residue shall not exceed 10% by weight. The insoluble residue test procedure is on file in the MnDOT Materials Laboratory.

Blending of sources and/or beds with an insoluble residue up to 15% is allowed to meet the 10% insoluble residue requirement. Individual beds thinner than 150 mm [**6 inches**] up to 5% of the total face height, are exempt from the 15% maximum insoluble residue requirement. However, the aggregate producer shall

practice good quality control at all times and exclude poor quality stone to the extent practical, regardless of the bed thickness and/or pocket size and location.

No carbonate quarry rock from the Platteville Geological Formation is allowed.

D Gradation

Ensure the aggregate gradation broad bands meet the following requirements in accordance with AASHTO T-11 (passing the No. 200 [75 µm] wash) and AASHTO T-27.

Table 3139-2
Aggregate Gradation Broad Bands (percent passing of total washed gradation)

Sieve size	A	B	C	D
1 in [25.0 mm]	—	—	100	—
¾ in [19.0 mm]	—	100*	85 – 100	—
½ in [12.5 mm]	100*	85 – 100	45 – 90	—
⅜ in [9.5 mm]	85 – 100	35 – 90	—	100
No. 4 [4.75 mm]	25 – 90	30 – 80	30 – 75	65 – 95
No. 8 [2.36 mm]	20 – 70	25 – 65	25 – 60	45 – 80
No. 200 [0.075 mm]	2.0 – 7.0	2.0 – 7.0	2.0 – 7.0	3.0 – 8.0

* The Contractor may reduce the gradation broadband for the maximum aggregate size to 97 percent passing for mixtures containing RAP, if the oversize material originates from the RAP source. Ensure the virgin material meets the requirement of 100 percent passing the maximum aggregate sieve size.

Table 3139-3
Mixture Aggregate Requirements

Aggregate Blend Property	Traffic Level 2	Traffic Level 3	Traffic Level 4	Traffic Level 5
20 year Design ESAL's	<1 million	1 - 3 million	3 - 10 million	10 – 30 million
Min. Coarse Aggregate Angularity (ASTM D5821)				
(one face / two face), %- Wear	30/-	55 / -	85 / 80	95 / 90
(one face / two face), %- Non-Wear	30/-	55 / -	60/ -	80 / 75

Min. Fine Aggregate Angularity (FAA) (AASHTO T304, Method A) %-Wear %-Non-Wear	40 40	42 40	44 40	45 40
Flat and Elongated Particles, max % by weight, (ASTM D 4791)	-	10 (5:1 ratio)	10 (5:1 ratio)	10 (5:1 ratio)
Min. Sand Equivalent (AASHTO T 176)	-	-	45	45
Max. Total Spall in fraction retained on the #4 [4.75mm] sieve – Wear Non-Wear	5.0 5.0	2.5 5.0	1.0 2.5	1.0 2.5
Maximum Spall Content in Total Sample – Wear Non-Wear	5.0 5.0	5.0 5.0	1.0 2.5	1.0 2.5
Maximum Percent Lumps in fraction retained on the #4 [4.75mm] sieve	0.5	0.5	0.5	0.5
Class B Carbonate Restrictions				
Maximum% -#4 [-4.75mm] Final Lift/All other Lifts	100/100	100/100	80/80	50/80
Maximum% +#4 [+4.75mm] Final Lift/All other Lifts	100/100	100/100	50/100	0/100
Max. allowable scrap shingles– MWSS(1) Wear/Non Wear	5/5	5/5	5/5	5/5
Max. allowable scrap shingles – TOSS(1) Final Lift/All other Lifts	5/5	5/5	0/5	0/0

(1) MWSS is manufactured waste scrap shingle and TOSS is tear-off scrap shingle.

3139.3 Permeable Asphalt Stabilized Stress Relief Course (PASSRC) and Permeable Asphalt Stabilized Base (PASB) Requirements

A Restrictions

Do not use recycled materials including glass, concrete, bituminous, shingles, ash, and steel slag.

B Gradation

The Gradation limits are also considered the Job Mix Formula (JMF) limits.

B.1 PASB

Table 3139-4 PASB Aggregate Gradation	
Sieve Size	Percent Passing
1 ½ inch [37.5 mm]	100
1 inch [25.0 mm]	95 - 100
¾ inch [19.0 mm]	85 – 95
3/8 inch [9.5 mm]	30 – 60
No. 4 [4.75 mm]	10 – 30
No. 8 [2.36 mm]	0 – 10
No. 30 [600 µm]	0 – 5
No. 200 [75 µm]	0 - 3

B.2 PASSRC

Table 3139-5 PASSRC Aggregate Gradation	
Sieve Size	Percent Passing
5/8 inch [16.0 mm]	100
1/2 inch [12.5 mm]	85 – 100
3/8 inch [9.5 mm]	50 – 100
No. 4 [4.75 mm]	0 – 25
No. 8 [2.36 mm]	0 – 5

C Quality

Requirements will meet all of 3139.2.C.

D Mixture Quality Requirements

Table 3139-6 Mixture Aggregate Requirements for PASSRC & PASB	
Aggregate Blend Property	
Coarse Aggregate Angularity (ASTM D5821) (one face/two face) % PASSRC [1] PASB [1]	 95/- -/65
Fine Aggregate Angularity (FAA) (AASHTO T304, Method A) %	NA
Flat and Elongated Particles, max(2) % by weight, (ASTM D 4791)	NA
Clay Content (2) (AASHTO T 176)	NA
Total Spall in fraction retained on the 4.75mm [#4] sieve	3.0
Maximum Spall Content in Total Sample	5.0
Maximum Percent Lumps in fraction retained on the 4.75mm [#4] sieve	0.5

(1) Carbonate Restrictions: If Class B (as defined in 3139.2.B.2), crushed carbonate quarry rock (limestone or dolostone), is used in the mixture, or if carbonate particles in the material retained on the 4.75 mm [**No. 4**] sieve exceeds 55 percent, by weight, the minus 0.075 mm [# **200**] sieve size portion of the insoluble residue shall not exceed 10 percent.

3139.4 Ultra Thin Bonded Wearing Course (UTBWC) Requirements.

A. Restrictions

Do not use recycled materials including glass, concrete, bituminous, shingles, ash, and steel slag.

B. Coarse Aggregate

Provide a Class A aggregate, as defined in 3139.2.B.1, in accordance with the following requirements:

Table 3139-7
UTBWC Coarse Aggregate Requirements

Tests	MnDOT Laboratory Manual Method	Limit, %
Flat and elongated ratio at 3:1	1208	≤ 25
Los Angeles Rattler Test (LAR)	1210	≤ 40
Bulk Specific Gravity	1204	

C. Fine Aggregate

Provide fine aggregate, passing the No. 4 [4.75 mm] sieve in accordance with the following requirements:

Table 3139-8
Fine Aggregate Requirements

Tests	Method	Limit, %
Sand equivalent*	AASHTO T 176	≥ 45
Uncompacted void content	MnDOT Laboratory Manual 1206	≥ 40
Bulk Specific Gravity	MnDOT Laboratory Manual 1205	

3139.5 SAMPLING AND TESTING

Perform sampling, sieve analysis, lumps, crushing, and shale testing meeting the requirements of the MnDOT Laboratory Manual.

S - 55 (3891) STORM DRAIN INLET PROTECTION

The provisions of MnDOT 3891 are supplemented and/or modified with the following:

s 55.1 MnDOT 3891.3A Rock Log, is revised to read as follows:

Rock logs shall meet the requirements of 3897.2 Filter Log Type Rock Log.

s 55.2 MnDOT 3891.3B Compost Log, is revised to read as follows:

Compost logs shall meet the requirements of 3897.2 Filter Log Type Compost Log

S - 56 FINAL ESTIMATE AND FINAL PAYMENT

The following provisions shall apply to preparation of the Final Estimate and execution of Final Payment under this Contract:

s 56.1 Final Estimate

State Law provides that the final estimate will be made within 90 days after completion of all work required under this Contract. If, however, the total value of the Contract exceeds $2,000,000.00, the 90 day requirement will not apply and the time allowed for making such final estimate shall be 180 days after the work under this Contract has been, in all things, completed to the satisfaction of the Commissioner.

s 56.2 Final Payment

If this Contract contains a "Disadvantage Business Enterprise or Targeted Group Business" goal, the following requirement shall apply:

"Before final payment is made, the Contractor shall also complete an affidavit showing the total dollar amounts of work performed by disadvantaged business enterprise (DBE) and targeted group business (TGB)."

ATTACHMENTS TO THE SPECIAL PROVISIONS

MINNESOTA POLLUTION CONTROL AGENCY NOTIFICATION OF INTENT TO PERFORM A BRIDGE DEMOLITION FOR MN/DOT OPERATIONS

Minnesota Pollution Control Agency

Type of Notification: [ ] Original [ ] Amended [ ] Project Cancellation

Notification must be postmarked or received ten (10) WORKING days before demolition begins.

Demolition Contractor:
Name:_____
Address:_____
_____
City, State, Zip:_____
Contact Person:_____
Phone Number(s):_____

Bridge Owner:
Name:_____
Address:_____
_____
City, State, Zip:_____
Contact person:_____
Phone Number(s):_____

Bridge Information:
Bridge Number:_____
Mile Point/Trunk Highway:_____
Miles and direction (N,E,W,S) From Nearest Town:_____
_____
County:_____
Project Engineer Phone Number(s):_____
Age of Brdg. (years):_____ Size of Brdg. (sq. ft.):_____
Type of Bridge:_____
Suspect Materials to be checked for asbestos: pipes, asphalt underlay,
spray-on application, and joint compounds.
Dates when demolition will Begin _____ & End _____.
Both Beginning and Ending dates should be amended in writing as necessary to reflect current project dates.

Check as appropriate:
☐ There is no Asbestos Containing Material (ACM) present in the structure to be demolished
☐ ACM will be removed prior to or during demolition (attach MPCA asbestos notification form)

1. Provide name of company and/or individual that conducted the bridge assessment, MDH certification # and procedure used to determine presence or absence of ACM (including analytic method): _____
_____

2. Description of planned demolition and the specific method(s) that will be used:_____
_____

Demolition Material should be recycled on site or sent to a metal scrap recycler. Information must be provided on the following items 3 and 4 for any material not recycled:

3. Demolition Waste Transporter(s):
Transporter Name:_____
Transporter Contact:_____
Transporter Address:_____
City, State, Zip:_____
Phone Number:_____

4. Demolition Waste Disposal Site:
Landfill Name:_____
Owner/Operator:_____
Address/Location:_____
City, State, Zip:_____
Phone Number:_____

5. I certify that the above information is correct and I am a bonafide representative of the demolition contractor or bridge owner and have authority to enter into agreements for my employer. In event that unexpected asbestos containing material is found, the material will be removed by a MDH certified asbestos abatement contractor.

Signature of Contractor, Owner Agent_____ **Date**_____

Send to: Minnesota Pollution Control Agency Regional Environmental Management Division 520 Lafayette Road N. St. Paul, MN 55155-4194	CC: Mn/DOT (att. Mark Vogel) Mail Stop 620 395 John Ireland Boulevard St. Paul, MN 55155-3000	For questions call: 651-284-3790

PCB Removal Information *Polychlorinated Biphenyls (PCBs) will be removed from the bridge prior to demolition.*
Mercury Removal Information *Material containing mercury will be removed from the bridge prior to demolition.*
Treated Wood and Lead Plates *Will be removed from the bridge prior to demolition or separated during demolition.*
Peeling or Loose Lead Paint *Will be encapsulated or removed prior to demolition.*
[Notification of Intent to Perform a Demolition form ()

Revised 09/06

(1910) FUEL ESCALATION CLAUSE

January 28, 2009

The provisions set forth in MnDOT 1910 are hereby deleted, and the following is substituted therefore:

These provisions provide for compensation adjustments in the cost of motor fuels (diesel and gasoline) consumed in prosecuting the Contract work. The Engineer will calculate the Fuel Cost Adjustments. Payments or credits will be applied to partial and final payments for work items set forth herein.

For this purpose, the Department will establish a Base Fuel Index (BFI) for fuel to be used on the Project. The Base Fuel Index will be the average of the high and low rack prices shown for No. 2 ultra low sulfur fuel oil in the "OPIS Energy Group" tabulation titled "RackFax, Minneapolis, MN, OPIS Direct Gross No. 2 Distillate Fuels" for the day of the Contract letting.

A Current Fuel Index (CFI) in cents per gallon will be established for each month. The CFI will be the average of the high and low rack prices shown for No. 2 ultra low sulfur fuel oil in the "OPIS Energy Group" tabulation titled "RackFax, Minneapolis, MN, OPIS Direct Gross No. 2 Distillate Fuels" averaged for the beginning and ending dates of the monthly period being adjusted.

The Engineer will compute the ratio of the Current Fuel Index to the Base Fuel Index (CFI/BFI) each month. If that ratio falls between 0.85 and 1.15, no fuel adjustment will be made that month. If the ratio is less than 0.85, a credit to the Department will be computed. If the ratio is greater than 1.15, additional payment to the Contractor will be computed.

Credit or additional payment will be computed as follows:

(1) The Engineer will estimate the quantity of work done in that month under each of the Contract items listed below.

(2) The Engineer will compute the gallons of fuel used in that month for each of the Contract items listed below by applying the unit fuel usage factors shown.

(3) The Engineer will summarize the total gallons (Q) of fuel used in that month for the applicable items.

(4) The Engineer will determine the Fuel Cost Adjustment (FCA) from the following formulas:

If the Current Fuel Index (CFI) is greater than the Base Fuel Index (BFI), the following formula shall be used to determine the amount of Fuel Cost Adjustment to be paid to the Contractor. FCA = [(CFI/BFI) – 1.15] x Q x BFI

If the Current Fuel Index (CFI) is less than the Base Fuel Index (BFI), the following formula shall be used to determine the amount of Fuel Cost Adjustment to be credited to the Department.

FCA = [(CFI/BFI) – 0.85] x Q x BFI

Where FCA = Fuel Cost Adjustment (cents)
CFI = Current Fuel Index (cents per gallon)
BFI = Base Fuel Index (cents per gallon)
Q = Monthly total gallons of fuel

Basis of Payment

A Fuel Cost Adjustment payment to the Contractor will be made as a lump sum each payment period based on the last published CFI. A Fuel Cost Adjustment credit to the Department will be deducted as a lump sum each payment period from any monies due the Contractor. Upon completion of the work under the Contract, any difference between the estimated quantities previously paid and the final quantities will be determined. The CFI in effect on the day of completion of the Contract will be applied to the quantity differences in accordance with the procedures set forth above.

Schedule of Work Items
(Only items shown will be considered for compensation adjustments.)

	ITEM	UNIT	GALLONS OF FUEL PER UNIT	UNIT	GALLONS OF FUEL PER UNIT
(1) Earthwork:					
2105.501	Common Excavation	Cu. Yd	0.17	m3	0.22
2105.503	Rock Excavation	Cu. Yd	0.27	m3	0.35
2105.505	Muck Excavation	Cu. Yd	0.17	m3	0.22
2105.507	Subgrade Excavation	Cu. Yd	0.17	m3	0.22
2105.515	Unclassified Excavation	Cu. Yd	0.23	m3	0.30
2105.521	Granular Borrow (EV)	Cu. Yd	0.17	m3	0.22
	Granular Borrow (CV)	Cu. Yd	0.19	m3	0.25
	Granular Borrow (LV)	Cu. Yd	0.14	m3	0.18
2105.522	Select Granular Borrow (EV)	Cu. Yd	0.17	m3	0.22
	Select Granular Borrow (CV)	Cu. Yd	0.19	m3	0.25
	Select Granular Borrow (LV)	Cu. Yd	0.14	m3	0.18
2105.523	Common Borrow (EV)	Cu. Yd	0.17	m3	0.22
	Common Borrow (CV)	Cu. Yd	0.19	m3	0.25
	Common Borrow (LV)	Cu. Yd	0.14	m3	0.18
2105.535	Topsoil Borrow (EV)	Cu. Yd	0.17	m3	0.22
	Topsoil Borrow (CV)	Cu. Yd	0.19	m3	0.25
	Topsoil Borrow (LV)	Cu. Yd	0.14	m3	0.18
2106.607	Common Embankment (CV)	Cu. Yd	0.19	m3	0.25
2106.607	Granular Embankment (CV)	Cu. Yd	0.19	m3	0.25
2106.607	Select Granular Embankment(CV)	Cu. Yd	0.19	m3	0.25
2106.607	Select Granular Embankment Modified (__ %) (CV)	Cu. Yd	0.19	m3	0.25
2106.607	Excavation – Rock	Cu. Yd	0.27	m3	0.35
2106.607	Excavation – Muck	Cu. Yd	0.17	m3	0.22

	ITEM	UNIT	GALLONS OF FUEL PER UNIT	UNIT	GALLONS OF FUEL PER UNIT
(2) Aggregate Base:					
2211.501	Aggregate Base	Ton	0.55	t	0.61
2211.502	Aggregate Base (LV)	Cu. Yd	0.77	m3	1.01
2211.503	Aggregate Base (CV)	Cu. Yd	0.99	m3	1.29
2211.607	Open Graded Aggregate Base (CV)	Cu. Yd	0.99	m3	1.29
(3) Aggregate Shouldering:					
2221.501	Aggregate Shouldering	Ton	0.55	t	0.61
2221.502	Aggregate Shouldering (LV)	Cu. Yd	0.77	m3	1.01
2221.503	Aggregate Shouldering (CV)	Cu. Yd	0.99	m3	1.29
(4) Concrete Pavements:					
2301.511	Structural Concrete	Cu. Yd	0.98	m3	1.28
2301.513	Structural Concrete HE	Cu. Yd	0.98	m3	1.28
2301.604	Structural Concrete	Sq. Yd.	0.027*t	m2	0.00128*t
(5) Bituminous Pavements:					
2350.501	Type ( ) Wearing Course Mixture ( )	Ton	0.90	t	0.99
2350.502	Type ( ) Non-Wearing Course Mixture ( )	Ton	0.90	t	0.99
2350.503	Type ( ) ( ) Course ( ), (*t*)" Thick	Sq. Yd	0.051*t		
2350.503	Type ( ) ( ) Course (,), (*t*) mm Thick			m2	0.0024*t
2360.501	Type SP ( ) Wearing Course Mixture ( )	Ton	0.90	t	0.99
2360.502	Type SP ( ) Non-Wearing Course Mixture (,)	Ton	0.90	t	0.99
2360.503	Type SP ( ) ( ) Course (,), (*t*)" thick	Sq. Yd	0.051*t		
2360.503	Type SP ( ) ( ) Course (,), (*t*) mm thick			m2	0.0024*t
(6)Pipe:***:					
2501.511	__ ____ Pipe Culvert ___	Lin. Ft.	0.70	m	2.30
2501.521	Pipe Arch Culvert	Lin. Ft.	0.70	m	2.30
2501.561	__ ____ Pipe Culvert Des 3006 ___	Lin. Ft.	0.70	m	2.30
2501.603	Pipe Culvert	Lin. Ft.	0.70	m	2.30
2503.511	__ ____ Pipe Sewer ___	Lin. Ft.	0.70	m	2.30
2503.521	__ ____ Pipe Arch Sewer ___	Lin. Ft.	0.70	m	2.30
2503.541	__ ____ Pipe Sewer Des 3006___	Lin. Ft.	0.70	m	2.30
2503.603	__ ____ Pipe Sewer	Lin. Ft.	0.70	m	2.30

t = thickness

NOTE: No price No price adjustments will be made on fuel used for drying and heating aggregates.

*** No price adjustment will be made for pipes less than 12" in diameter or jacked pipes.

SCHEDULE OF MATERIALS CONTROL

See also website: http://www.mrr.dot.state.mn.us/materials/materials.asp for April 2, 2012.
http://www.dot.state.mn.us/materials/labdocs/2012SMCFinal.pdf

60 sheets

Minnesota Department of Transportation Schedule of Materials Control (SMC) – Introduction Page

(Federal Aid, State Funds, County/Municipal Federal Aid Projects and State Aid Projects)

This schedule outlines the minimum sampling and testing required for most materials used in highway construction. Some items that are rarely used or materials of recent development are often covered by special provisions and may not be shown on the schedule. For more information regarding contract requirements for testing, please reference the "Standard Specifications for Construction", Specification 1603 Materials: Specifications, Samples, Tests, and Acceptance.

Laboratories performing acceptance tests for payment shall be accredited by the AASHTO Materials Reference Laboratory (AMRL) or a comparable accreditation program approved by Mn/DOT and the FHWA for all test procedures performed.

When sample sizes required for testing exceed 35 pounds, please submit multiple containers of the material with no individual container weighing more than 35 pounds.

Small quantities of materials may be accepted without sampling and testing. A small quantity is defined as any total quantity, for the whole project, of one material, which is smaller than the minimum quantity required for testing unless modified by the individual material items. These materials shall be from known, reliable sources, perform satisfactorily and meet the requirements for purpose intended. The inspection report (Form 02415) should include a statement to this effect and show the source. Form 2403 may be used to report small quantities of diverse materials from different sources. Form 02415 and Form 2403 (or approved revisions) are referenced in the Schedule of Materials Control for project record documentation and are required to be maintained in the project file.

Previously approved materials transferred from another project should be reported on Form 02415. The report should include: type of material, quantities involved, source, and supplier of materials. Whenever possible, include the project number for which the material was originally approved.

If Forms 02415 and 2403 are referenced by form number within the Materials Control Schedule for materials or products received from pre-approved sources, where the field responsibility for acceptance is visual inspection and all information required to complete these forms is contained in other documents in the project file, the use of these forms becomes optional. If these forms are completed and sent to the Project Engineer by off-site inspection personnel from the district or the Office of Materials, they must be retained in the project file.

A Telephone Index is included with the Schedule giving contact information for the specialty areas if further information is required regarding the various materials. A form index is also included.

The Department maintains the Approved/Qualified Products List and the Certified Products and Services List, as well as, the Schedule of Materials Control. All are available electronically on the Office of Materials and Road Research website www.dot.state.mn.us/materials.html

Products manufactured offsite may be pre-approved; however, final acceptance will be made at the point of incorporation, based upon review of documentation and inspection for shipping or other damage.

Contact the Mn/DOT District Independent Assurance Inspector when project starts to provide the proper servicing of your project.

Index

Certifications List

Material	SMC Section	Sub Section	Page	Certification Needed
All Base, Surface, and Granular Materials	I. Grading & Base	Many	7-12	Form G&B-104 (24346) include gradation and quality test results
Plant Mixed Asphalt (PMA)	II. Bituminous	Many	13-18	All PMA from certified supplier www.dot.state.mn.us/materials/bituminous.html
Shingles	II. Bituminous	2	14	Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.
Bituminous Material	II. Bituminous	9	17	Only Bituminous Materials from certified asphalt binder sources are allowed for use. The most current list of Certified Sources can at http://www.dot.state.mn.us/products
Emulsified Asphalt	III. Bituminous Specialty Items		19	Use Emulsion for seal coat from a certified emulsified asphalt source.
Concrete Ready Mix	IV. Concrete	Many	22-37	Contact Report from Ready-Mix Plant. All concrete from certified plant including a computerized certificate of compliance with each load.
Ground Granulated Blast Furnace Slag Fly Ash Admixtures Portland Cement	IV. Concrete		23	Concrete Plant Batching Materials: All materials must come from certified approved, or qualified sources. All certified sources must state so on the Bill of Lading Delivery invoice including Mn/DOT standardized certification statement for cement, flyash, and slag. The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.
Plastic for Curing	IV. Concrete		30	A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.
Aggregate for Low Slump Overlays	IV. Concrete		34	Aggregate pit numbers and 1 passing gradation result per fraction per source

Material	SMC Section	Sub Section	Page	Certification Needed
Profiler	IV. Concrete		33	Contractor provides Mn/DOT certified Inertial Profiler Results for bumps/dips and/or Areas of Localized Roughness for the entire project.
Aggregate for Concrete Pavement Repair	IV. Concrete		35	Aggregate pit numbers and 1 passing gradation result per fraction per source
Aggregate for Dowel Bar Retrofits	IV. Concrete		36	Aggregate pit numbers and 1 passing gradation result per fraction per source
Plant Stock & Landscape Materials	V: Landscaping etc.	2	37	Several certifications
Silt Fence	V: Landscaping etc.	5	38	Certificate of Compliance with MARV values
Flotation Silt Curtain	V: Landscaping etc.	6	38	Manufacturers' certification of compliance
Mulch Type 3	V: Landscaping etc.	12	38	Certified Vendor by Minnesota Crop Improvement Association must be tagged grain straw only on label.
Mulch Type 6 Wood Chips	V: Landscaping etc.	13	39	Emerald Ash Borer Compliance Agreement with the MDA
Seeds	V: Landscaping etc.	14	39	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Seeds - Native	V: Landscaping etc.	14	39	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Sod	V: Landscaping etc.	15	39	A certified tag by Minnesota Crop Improvement Association for Salt tolerant sod. A certificate of Compliance for all other types of sod listing grass varieties.
Compost	V: Landscaping etc.	16	39	A/QPL with certified test reports.
Waterproofing material membrane waterproof system	VI: Chemical Items		40	Certificate and test results
Waterborne latex traffic marking paint	VI: Chemical Items		41	Certificate of Compliance
Epoxy traffic paint	VI: Chemical Items		41	Certificate of Compliance
Traffic marking paint	VI: Chemical Items		41	Certificate of Compliance
Non-traffic marking paint	VI: Chemical Items		41	Certificate of Compliance
Bridge structural steel paint	VI: Chemical Items		42	Certificate of Compliance
Exterior masonry paint	VI: Chemical Items		42	Certificate of Compliance
Noise wall stain	VI: Chemical Items		42	Certificate of Compliance
Drop-on glass beads	VI: Chemical Items		42	Certificate of Compliance
Pavement marking tape	VI: Chemical Items		42	Certificate of Compliance
Steel sign posts	VII: Metallic	2	44	Certification of domestic source if applicable under 1601.
Posts for traffic or fence	VII: Metallic	3A	44	Certification of domestic source if applicable under 1601. For fence: fence certification form.
Fence components	VII: Metallic	3B	44	Fence certification form.
Fence gates	VII: Metallic	3C	44	Fence certification form.
Fence barbed wire fabric	VII: Metallic	3D	44	Fence certification form.
Fence woven wire fabric	VII: Metallic	3E	45	Fence certification form.
Fence chain link wire fabric	VII: Metallic	3F	45	Fence certification form.
Reinforcing steel uncoated bars	VII: Metallic	5A	45	Certificate of Compliance & certified mill analysis
Reinforcing steel epoxy bars	VII: Metallic	5B	45	Inspected tag or Certificate of Compliance & certified mill analysis
Steel Fabric	VII: Metallic	5E	46	Certificate of Compliance
Dowel Bars	VII: Metallic	5F	46	Certificate of Compliance
Pre or post tensioning strand	VII: Metallic	5G	47	Mill analysis

Material	SMC Section	Sub Section	Page	Certification Needed
Anchor rods & Structural Fasteners	VII: Metallic	7	47	Yearly Mn/DOT passing test report
Timber & lumber	VIII: Miscellaneous	1	51	Certified on invoice
Elastomeric bearing pad	VIII: Miscellaneous	4	51	Certificate of Compliance
Corrugated metal pipe	IX: Geosynthetics & Pipe	1A	51	Certified on invoice
Corrugated metal structural plate	IX: Geosynthetics & Pipe	1B	51	Certified on invoice
Corrugated metal aluminum plate	IX: Geosynthetics & Pipe	1C	52	Fabricator's Certificate and guarantee
Concrete pipe & manholes reinforced	IX: Geosynthetics & Pipe	3A	52	Certified stamp and certification document
Concrete pipe non reinforced	IX: Geosynthetics & Pipe	3B	52	Certified stamp and certification document
Precast box culverts	IX: Geosynthetics & Pipe	4A	53	Stamped & field inspection report
Prestressed beams & posts, etc	IX: Geosynthetics & Pipe	4B	53	Stamped & field inspection report
Manholes & catch basins	IX: Geosynthetics & Pipe	5	54	Certification document or stamped
Thermoplastic pipe ABS & PVC	IX: Geosynthetics & Pipe	7	54	Certificate of Compliance
Corrugated PE Pipe: Single wall – edge drains	IX: Geosynthetics & Pipe	8	54	Certificate of Compliance
Corrugated PE Pipe: dual wall – 12"-48"	IX: Geosynthetics & Pipe	13	55	Certificate of Compliance
Geotextile fabric	IX: Geosynthetics & Pipe	14	56	Manufacturers' Certification of compliance
Brick sewer concrete	X: Brick, Stone, Masonry	1B	57	Air content statement
Concrete masonry units	X: Brick, Stone, Masonry	2A	57	Air content statement
Light standards	XI: Electrical & Signal	1	58	Certificate of Compliance
Cable & Conductors	XI: Electrical & Signal	7	59	Usually inspected at the distributor. Documentation showing project number, reel number(s), & Mn/DOT test number(s) will be included with each project shipment. If not received from Contractor, submit sample for testing along with manufacturers' material certification.
Electrical systems	XI: Electrical & Signal	10	60	Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.
Traffic signal systems	XI: Electrical & Signal	11	60	Traffic Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.

Telephone Index for Schedule of Materials Control

Section	Page	Section Name	Contact	Phone
Part I	Page 7	Grading & Base – Specifications 2105, 2118, 2211, 2212, 2215, and 2221	Terry Beaudry Cary Efta Rebecca Embacher Mark Watson	(651) 366-5456 (651) 366-5421 (651) 366-5525 (651) 366-5596
Website: www.dot.state.mn.us/materials/gradingandbase.html				
Part II Part II B 4	Page 13 Page 17	Bituminous - Spec. 2360 Asphalt Binder	John Garrity Jim McGraw Jason Szondy	(651) 366-5577 (651) 366-5548 (651) 366-5549
Website: www.dot.state.mn.us/materials/bituminous.html				
Part III	Page 19	Bituminous Specialty Items	Mark Watson Terry Beaudry	(651) 366-5596 (651) 366-5456
Part IV	Page 22	Concrete – Aggregates and Mix Design Concrete – Certified Ready Mix Concrete Concrete Paving Concrete – Bridges	Wendy Garr Wendy Garr Rob Golish Ron Mulvaney	(651) 366-5423 (651) 366-5423 (651) 366-5576 (651) 366-5575
Website: www.dot.state.mn.us/materials/concrete.html				
Part V	Page 38	Landscaping and Erosion Control Items Erosion Control Landscaping Wood Chips	 Lori Belz Scott Bradley Tina Markeson	 (651) 366-3607 (651) 366-4612 (651) 366-3619
Part VI	Page 40	Chemical Items	Jim McGraw Dave Iverson	(651) 366-5548 (651) 366-5550
Part VII	Page 43	Metallic Materials and Metal Products Sampling Test Results Bridge Structural Metals	 Steve Grover Laboratory Todd Niemann Barry Glassman	 (651) 366-5540 (651) 366-5560 (651) 366-4567 (651) 366-4568
Part VIII	Page 51	Miscellaneous Materials Sections 1thru 3 Section 4 Test Results	 Steve Grover Todd Niemann Barry Glassman Laboratory	 (651) 366-5540 (651) 366-4567 (651) 366-4568 (651) 366-5560
Part IX	Page 51	Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete Sections 1 thru 11, & 13 Section 12 Section 14 Test Results	 Steve Grover Rich Lamb Randy Tilseth Laboratory	 (651) 366-5540 (651) 366-5595 (651) 366-5451 (651) 366-5560
Part X	Page 57	Brick, Stone and Masonry Units/Modular Retaining Wall Blocks Sections 1, 2A,3, & 4 Section 2B Test Results	 Steve Grover Blake Nelson Laboratory	 (651) 366-5540 (651) 366-5599 (651) 366-5561
Part XI	Page 58	Electrical & Signal Sections 1, 8-11 Section 2, 4- 7 Section 3 Test Results	 Susan Zarling Steve Grover Wendy Garr Laboratory	 (651) 234-7052 (651) 366-5540 (651) 366-5423 (651) 366-5560

Form Index

Grading and Base	
Form No.	**Form Name**
G&B – 001 (02115-03)	Grading & Base Report
G&B – 002 (02154-02)	Random Sampling Acceptance
G&B – 101 (02402-03)	Sieve Analysis
G&B – 103 (02463)	Percent Crushing Report
G&B – 104 (24346)	Certificate of Aggregates & Granular Materials
G&B – 105 (21850)	Moisture Test
G&B – 203	(Table 2105-6, 2106-6) DCP Penetration Index Method
G&B – 204	(Table 2211-3) DCP Penetration Index Method
G&B – 205	2215 DCP Penetration Index Form – Full Depth Reclamation
G&B – 303 (24587-01)	Moisture - Density (Proctor) Test
G&B – 304 (02140-03)	Relative Density Test
Concrete	
Form No.	**Form Name**
2152	Concrete Batching Report
2162	Concrete Test Beam Data
2409	ID Card Concrete Test Cylinder
2448	Weekly Concrete Report
2449	Weekly Concrete Aggregate Report (QC/QA)
21412	Weekly Report of "Low Slump Concrete"
21763	Concrete Aggregate Worksheet
21764	Concrete Aggregate Worksheet JMF
24143	Weekly Certified Ready-Mix Plant Report (Verification)
24300	ID Card Cement Samples
24308	ID Card Fly Ash Samples
24327	Field Core Report
	Concrete W/C Ratio Calculation Worksheet
	Incentive/Disincentive Smoothness Worksheet
Bituminous	
Form No.	**Form Name**
2413	Asphalt Sample Identification Card
Miscellaneous	
Form No.	**Form Name**
2410	Sample ID Card
02415	Inspection Report on..... (May be used for documentation or use another method to capture required documentation)
2403	Inspection Report for Small Quantities (May be used for documentation or use another method to capture required documentation)
	Certification Form for Type of Fence used, see on right side of page, www.dot.state.mn.us/materials/lab.html

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Testing Rate (See Notes 1& 2)		Minimum Companion (Lab) Sample (See Note 2)		Form No. (See Note 4)
				Rate	Size	Rate	Size	
	1. Gradation			**Random Sampling**				
(a) 2118 (b) 2211 (c) 2221 (d) 2212	(a) Aggregate Surfacing (b) Aggregate Base (c) Aggregate Shoulders (d) Drainable Aggregate Base (OGAB & DSB)	3136, 3138, & Special Provisions	Production: 1/550 yd^3 (CV) Placement: 1/2,750 yd^3 (CV)	• < 280 yd^3 (CV) No tests Required • ≥ 280 yd3 (CV) to < 1,100 yd3 (CV) 1. Lot Size = Total Quantity 2. Divide lot into two equal sublots 3. Collect one random sample from each sublot 4. Average results to determine compliance • ≥ 1,100 yd^3 (CV) to < 5,500 yd^3 (CV) 1. Lot Size = Total Quantity 2. Divide Lot into four equal sublots 3. Collect one random sample from each sublot. 4. Average results to determine compliance • ≥ 5,500 yd^3 (CV) 1. #Lots = $\frac{\text{Total Bid Quantity}}{5{,}500}$ 2. Round # Lots up to next whole number 3. Lot Size = $\frac{\text{Total Bid Quantity}}{\#\text{Lots}}$ 4. Divide each Lot into four equal sublots. 5. Collect one random sample from each sublot. 6. Average results for each Lot to determine compliance.	60 lb	**(a, b, & c)** 1 per source (d) OGAB & DSB 2 per source	**(a, b, & c)** 30 lb. (d) OGAB & DSB 75 lb. send to G&B Unit.	**G&B-001** (02115-03) **G&B-002** (02154-02) **G&B-101** (02402) **G&B-104** (24346-02)

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Field Testing (see note 1)		Minimum Companion (Lab) Sample (See Note 2)		Form No. (See Note 4)
				Rate	Size	Rate	Size	
(e) 2105	**1. Gradation**(Continued) (e) Granular Borrow Select Granular Borrow Stabilizing Aggregate	3149 & Special Provisions	1/10,000 yd^3 (CV)	1/20,000 yd^3 (CV)		1 per source	30 lb.	**G&B-001** (02115-03), **G&B-101** (02402-03) **G&B-104** (24346-02)
(f) 2215 Check the proposal; projects awarded in 2012 may reference 2331for FDR	(f) Full Depth Reclamation (FDR)	3135 & Special Provisions	1/6,000 yd^2 (See Note 12)	1/12,000 yd^2	60 lb			**G&B-001** (02115-03) **G&B-101** (02402-03)
(g) 2511	(g) Granular Filter	3601 & Special Provisions	1 per source before delivery on project	1 per source	300 lb	1 per source	150 lb	**G&B-001** (02115-03) **G&B-101** (02402-03) **G&B-104** (24346-02)
(h) 2451 (i) 2451 (j) 2451 (k) 2451 (l) 2451 (m) 2502	(h) Granular Backfill (i) Aggregate Backfill (j) Granular Bedding (k) Aggregate Bedding (l) Coarse Filter Aggregate (m) Fine Filter Aggregate	3149 & Special Provisions	Two per source before delivery on project	1 per source	60 lb	1 per source	30 lb	**G&B-001** (02115-03) **G&B-101** (02402-03) **G&B-104** (24346-02)

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Field Testing (see note 1)		Minimum Companion (Lab) Sample (See Note 2)		Form No. (See Note 4)
				Rate	Size	Rate	Size	
(a) 2211 (b) 2221	**2. Proctor Test** (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions		(See Note 10) **2005 Spec Book:** 1 per source **2012 Spec Book** 1 per source	50 lb	One per project	25 lb.	**G&B-303** (24587-01)
(c) 2105	(c) Embankment Soil	2105	**2005 Spec Book:** **2012 Spec Book:** 1 major soil type (See Note 6)	**2005 & 2012 Specs Book :** For Specified Density: 1/major soil type. **2012 Spec Book:** For all other compaction requirements: One Contractor Companion/project				
(a) 2211 (b) 2221	**3. Specified Density Test (Sand Cone or other)** (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221 & Special Provisions		(See Note 10) 1/1,000 yd^3 (CV)				**G&B-001** (02115-03)
(c) 2105	(c) Embankment Soil (Excavation & Borrow)	2105 & Special Provisions		1/4,000 yd^3 (CV)				**G&B-304** (02140-03)

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Field Testing (See Note 1 & 2)		Minimum Companion (Lab) Sample (See Note 2)		Form No. (See Note 4)
				Rate	Size	Rate	Size	
(a) 2211 (b) 2221	**4. Dynamic Cone Penetration (DCP) Index Method** (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions		1 DCP test/500 yd^3(CV)				**G&B-001** (02115-03) **G&B-204** (02170-02)
(c) 2215	(c) Full Depth Reclamation (FDR)	3135 & Special Provisions		1 DCP test/3,000 yd^2				**G&B-001** (02115-03) **G&B-205**
(d) 2105	(d) Granular Borrow Select Granular Borrow	2105, 3149, & Special Provisions		1 DCP test/2,000 yd^3(CV)				**G&B-001** (02115-03) **G&B-203** (02170-02)
(a) 2211 (b) 2221	**5. Moisture Content Test** (a) Aggregate Base (b) Aggregate Shoulder (see Note 11)	2211, 2221, & Special Provisions	**2005 Spec Book** — **2012 Spec Book** 1/1,000 yd^3	**2005 spec book:** 1/1,000 yd^3 or 10 tests whichever is less **2012 Spec Book:** One Contractor Companion/project				**G&B-001** (02115-03) **G&B-105** (21850-02)
(c) 2215	(c) Full Depth Reclamation	2215 or Special Provisions	**2005 Spec Book** — **2012 Spec Book** 1/6,000 yd^2	**2005 spec book:** 1/6,000 yd^2 **2012 Spec Book:**				
(d) 2105	(d) Embankment Soil (see Note 10)	2105 & Special Provisions	**2005 Spec Book** — **2012 Specifications** 1/10,000 yd^3	**2005 Spec Book** 1/10,000 yd^3 **2012 Spec Book** One Contractor Companion/project				

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Field Testing (See Note 1 & 2)		Minimum Lab Sample		Form No. (See Note 4)
				Rate	Size	Rate	Size	
2105 2118 2211 2212 2221	**6. Percent Crushing**	3136, 3138, 3149, & Special Provisions	1/Day			2 per source	30 lb. (See Notes 3, 7, 8 & 9)	**G&B-103** (02463) **G&B-104** (24346-02)
2105 2118 2206 2211 2212 2221 2451 2502	**7. Aggregate Quality** (LAR, Insoluble Residue, Lithological Exam & Bitumen Content)		1/source (See Note 5)					**G&B-104** (24346-02)
2215	**8. Depth Check**	3135 or Special Provision	1/1000 feet	1/3000 feet				

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

General Notes: Sampling and Testing Procedures are found in the Grading and Base Manual in Section 5-692.200. Obtain all gradation, quality and crushing samples after spreading and before compaction. When additional samples are obtained and tested beyond those required in the Schedule of Materials Control, incorporate the additional results to compute the average for compliance with the specifications.

Modify testing and sampling protocol for increases in Plan quantities as follows:

Time Plan Quantity Increased	Testing and Sampling
Before Collection of first sample.	Reorder sampling to account for additional quantity.
After Collection of first sample, but before sampling is complete.	Complete testing of current lot, and then reorder the sampling using the remaining quantity.
After collection of all original Plan quantity samples.	Order sampling for additional quantity.

I. Grading and Base Construction Items 2005 and 2012 Spec Book (www.dot.state.mn.us/materials/gradingandbase.html)

General Notes (cont)

Note 1: Samples are not required for 280 yd^3 (500 tons) or less. Report small quantities on form 02415 or 2403.

Note 2:

a) Laboratory samples are not required for 440 yd^3 (1,000 tons) or less.
b) Include the laboratory companion with the first field sample.
c) Include the field sample results with the laboratory sample.
d) Laboratories with AMRL Accreditation are not required to submit laboratory companion samples.

Note 3: Carbonate aggregates require 50 lbs. samples for lab testing.

Note 4: Tests may be reported on Grading and Base forms or on MnDOT LIMs Reports. Forms are available on the Grading & Base website at: http://www.dot.state.mn.us/materials/gradingandbase.html

Note 5: The Contractor may use the Ignition Oven (Mn/DOT Lab. Manual Method 1853) to determine bitumen content.

Note 6: Major soil types are defined in the Triaxial Chart located in the Grading and Base Manual.

Note 7: The Lab Quality/Crushing sample is the Verification Test for quality requirements. Submit the initial random quality and crushing sample from the first day's production.

Note 8: The crushing test will not be required when the material is crushed from a quarry or contains greater than 25% recycled material.

Note 9: A second test is required, when the first test fails. Average all tests to determined compliance, when multiple tests are performed. Laboratory samples are not required for 440 yd^3 (1,000 tons) or less.

Note 10: Required only for specified density.

Note 11: Required for Quality Compaction or DCP Method

Note 12: Provide gradation test results to the Engineer within the first 500 ft (150 m) of production and within 500 ft (150 m] after a failing gradation.

II. Bituminous Construction Items for Specification 2360 (Note #1)

(All bituminous mixtures are from Certified Plants) (www.dot.state.mn.us/materialsbituminous.html)

DEFINITIONS

SAMPLE TYPE	DESCRIPTION	SAMPLE LOCATION DETERMINED BY	SAMPLE TAKEN BY	SAMPLE TESTED BY
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor Contractor (mixture) Agency (density cores)	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor is required to test this sample. The results shall be used as part of the QC program.	Agency	Agency	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

A. Pre-Production Sampling and Testing for Specification 2360

SAMPLE SIZE: 80 lb. (35 kg) - plus #4 aggregate sample for quality testing and Percent Crushing
35 lb. (15 kg) - minus #4 aggregate for quality testing
80 lb. (35 kg) - RAP for Quality Testing
10 lb. (5 kg) - RAS (Shingles) for Gradation and Quality Testing
80 lb. (35 kg) - bituminous mixture plus 2 Gyratory specimens for volumetric testing
80 lb. (35 kg) - bituminous mixture for TSR testing (option A)
20 lb. (10 kg) - bituminous mixture for TSR testing plus 6 Gyratory specimens (option B)
2 lb. (1 kg) - for mineral filler.

1. Bituminous Mix Design (QC/QA)

QC Testing
REMARKS: Mix Design for Spec. 2360 is Contractor's responsibility with review by Mn/DOT.

QA Testing
For Gyratory Design, Option 1- Laboratory Mix Design: In addition to reviewing the Trial Mix data (JMF), test Contractor's two Gyratory specimens and uncompacted mixture (specimens and mixture submitted at optimum asphalt content). Also, evaluate TSR per 2360.2E5a(3).

For Gyratory Design Option 2, Modified Mix Design, review Trial Mix data only.

II. Bituminous Construction for Specification 2360 (Part A, cont.)

2. Aggregate Quality Testing (QA Only) QA Testing Contractor shall provide 24 hour notice of intent to sample aggregates for quality testing. Agency has the option to monitor sampling. Contractor submits to the Bituminous Engineer or the District Materials Engineer one (1) sample of each non-asphaltic aggregate type or class per source per year. Contractor shall also submit the asphaltic aggregate material when the mixture contains RAP or RAS. Quality testing will be performed as directed by the Bituminous Engineer or the District Materials Engineer. When aggregate qualities approach specification limits or when material variation is observed, take additional field samples. Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.
3. Mineral Filler (QA Only) QA Testing One (1) per shipment of 45 metric tons (50 tons) or less, unless previously inspected.
4. Additives (QA Only) QA Testing 1 qt. (1 L) of blended asphalt binder and additive. Sample first shipment of each type of material, then submit one sample per 250,000 gal. (1,000 m^3) (approximately 1,000 ton).

B. BITUMINOUS PRODUCTION for Specification 2360

SAMPLE SIZE: 35 lb. (15 kg) for Aggregate for Gradation (QC/QA)
75 lb. (35 kg) for each plus #4 Aggregate Type for Quality Testing
35 lb. (15 kg) for each minus #4 Aggregate Type for Quality Testing
70 lb. (35 kg) for each RAP material for Quality Testing
10 lb. (5 kg) RAS (Shingles) for Processed Gradation and Quality Testing
65 lb. (30 kg) for Mixture Properties (QC/QA) 3 full 6" by 12" cylinder molds for QA (Gyratory mixes)
90 lb. (40 kg) for TSR (QC/QA) 4 full 6" by 12" cylinder molds for QA
90 lb. (40 kg) for Aggregate Specific Gravity (QC/QA)
1 qt (1 L) for Asphalt Binder (QA)
½ gal (2 L) for Emulsified Asphalt (QA)

1. Plant Mix Aggregate Gradation Testing (QC/QA, Verification*) QC Testing 1 per 500 tons (450 metric tons) at start of production, for the first 2,000 tons (1,800 metric tons) of mixture produced, then 1 per 1,000 tons (900 metric tons) or portion thereof per mix blend as required by 2360. 2G6 Companion samples taken for agency. REMARKS: See Note #2, Note #3, & Note #5. QA Testing Companions to QC samples set aside for 10 calendar days & tested as needed. The Agency representative observes QC testing.
2. Aggregate Percent Crushing (QC/QA, Verification*) QC Testing Testing rates as required by 2360.2G6 CAA, 2360.2G6 FAA. Two tests per day (CAA, FAA) for first two days. If CAA results exceed the specification minimum by 8% of the requirement; sample daily, test minimum one per week. If FAA results exceed the specification minimum by 5% of the requirement; sample daily, test minimum one per week. REMARKS: See Note #2, Note #3, & Note #4 QA Testing Companions to QC samples set-aside for 10 calendar days and tested as needed. The Agency representative observes QC testing.
3. Aggregate Quality Testing (QA Only) QA Testing When aggregate qualities approach specification limits or when material variation is observed, take additional field samples as requested by Project Engineer. When material variation is observed in RAP or RAS take additional field samples as requested by Project Engineer.

II. Bituminous Construction for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

4. Asphalt Binder Content, % (QC/QA, Verification)
QC Testing
1 per 500 tons (450 metric tons) per mix blend for first 2,000 tons (1,800 metric tons) of mixture produced. Then 1 per 1000 tons (900 metric tons) or portion thereof per mix blend as required by 2360.2G6

REMARKS: See Note #5.

(a) Meter Method (Virgin only)..... Mn/DOT Bituminous Manual
(b) Incinerator Oven..... Mn/DOT Lab Manual Method 1853
(c) Chemical Extraction..... Mn/DOT Lab Manual Method 1851 or 1852
(d) Spot Check (Virgin only)..... Mn/DOT Bituminous Manual 5-693.848

REMARKS: The verification companion sample must use Method (b) or (c) only. When more than one Mn/DOT approved test procedure is available, the Contractor shall select one method at the beginning of the project (when material is submitted for Trial Mix Review) and use that method for the entire project. The Contractor and Engineer may agree to change test procedures during the construction of the Project.
REMARKS: See Note #2 & Note #3. If a member of a monitoring team observes the Contractor test, note and sign under remarks.
REMARKS: A computer file of the plant's control settings is required every 20 minutes for verifying the % add AC

QA Testing Companions to QC samples set aside for 10 calendar & tested as needed. The Agency representative observes QC testing as needed. The Agency will review the computer files of the plant's control settings.

5. Mixture Properties (QC/QA, Verification*)
Maximum Specific Gravity, Gyratory Bulk Specific Gravity - 2 Specimen Average, air voids, Adjusted Asphalt Film Thickness (AFT), asphalt binder content, gradation, and AC/Total AC ratio.
REMARKS: See Note #7 Asphalt Film Thickness (AFT)

QC Testing
1 per 500 tons (450 metric tons) per mix blend, at the start of production, for first 2,000 tons (1,800 metric tons) of mixture produced. Determine planned tonnage for each mixture to be produced during the production day. Divide the planned production by 1,000; round up to the next higher whole number. This number will be the number of production tests required for that mixture.
Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day.

REMARKS: See Note #2, Note #3, & Note #9.

QA Testing
Companion samples to QC samples set aside for 10 calendar days and tested as needed. The agency representative shall review QC operations on a daily basis. Review shall include but is not limited to monitoring QC summary sheets and comparing allowable tolerances for verification sample/verification companion sample test results. The Agency representative shall observe QC testing.

*Verification Testing
Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day. The verification companion shall also be tested for CAA and FAA at a rate of 1 test per week, if the CAA and FAA exceed the requirements by 8% and 5% respectively, otherwise test daily.

An Agency representative will take 1 verification sample per mixture blend per day for Mn/DOT laboratory testing. A verification companion sample will be given to contractor for QC testing.

II. Bituminous Construction for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

6. Core Density and Thickness

QC Testing

Production/lot testing rate requirements.

Daily Production		Lots
English Ton	(Metric Ton)	
300* – 600	(270* – 545)	1
601 – 1000	(546 – 910)	2
1001 – 1600	(911 – 1455)	3
1601 – 2600	(1456 – 2359)	4
2601 – 4600	(2360 – 4173)	5
4601+	(4174+)	#

Add 1 lot/every 900 tons over 4601 tons (4174 metric tons)

*When mix production is less that 300 tons (270 metric tons), establish 1st lot when accumulative tonnage exceeds tons 300 tons (270 metric tons).

Core locations determined and marked by Agency. Companion cores are required for each Contractor density core. The Contractor shall schedule the approximate time of testing during normal project work hours so that the Agency may observe and record the saturated surface dry and immersed weight of the cores.

REMARKS: Sawing of cores into separate lifts is required. Contractor is required to have a saw capable of separating the core lifts without damaging the material. See Note #8 for Longitudinal joint density cores.

QA Testing

Core locations determined and marked by Agency. Agency representative observes all Contractor coring, measuring, sawing and testing, and takes possession of Agency cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

Remarks: See Note #6, Note #8, and Note #9

7. Aggregate Specific Gravity (QC/QA)

QC Sampling: Sampled and tested by Contractor, if requested by District Materials Engineer.

QA Testing: Companion sample to QC sample shall be submitted to the District Materials Lab and tested as needed.

8. Tensile Strength Ratio (T.S.R.) (QC/QA)

QC Sampling

Sample as directed by the Engineer. If the Engineer requires the samples to be tested, both the Contractor and the Department will be required to test these samples within 72 hours after they are sampled.

QA Testing

When QC sampling is required, the companion sample to QC sample shall be submitted to the District/Division Materials Lab and tested as needed.

II. Bituminous Construction Items for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

9. BITUMINOUS MATERIALS

Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources: http://www.dot.state.mn.us/products

SAMPLE SIZE: 1 L (1 qt) for Asphalt Binder (QA)/Cutback Asphalt (QA) 2 L (½ gal) for Emulsified Asphalt (QA)

Pay Item No.	Material	Spec. No.	Quality Control (QC)	Quality Assurance (QA)	Form No.
2360	Asphalt Binder	3151.2	QC testing is the responsibility of the bituminous material supplier. Random sampling is arranged by the Mn/DOT Chemical Laboratory.	State inspector observes contractor personnel taking sample. Sample first shipment of each grade of material at the start of a plant's production or after set-up of a portable plant. Thereafter, sample and submit one sample per 1,000,000 liters (250,000 gal). Sample asphalt binder in clean one L (1 qt) steel container.	2413 Asphalt Sample Identification Card
2201 2355 2356 2357 2514	Emulsified Asphalt	3151.2		Sample first shipment, then submit one sample per 200 m^3 ((50,000 gal.). Sample emulsified asphalt in clean two L (2 qt.) plastic container with wide screw top and send to Mn/DOT Chemical Lab within 7 days of sampling.	
2357 2358 2514	Cutback Asphalt	3151.2		Cutback Asphalt should only be used in cold temperature applications with the Engineer's approval. Contact Bituminous Engineering Unit for cold temperature application guidelines. Pressure fit 1 L (1qt.) container for cutback asphalt.	

10. Moisture Content in Mixture (QC only)

QC Testing

Sampling and testing shall be conducted by the Contractor on a daily basis unless exempted by the Engineer and tested according to the procedures in the Laboratory Manual 1855. Moisture contents above 0.3% are not allowed.

Note #1 Projects with bituminous tonnage less than or equal to 300 tons (272 metric tons) per day may be accepted on a small quantity basis at the discretion of the Engineer. Retain Form 02415 or Form 2403 in Project File.

II. Bituminous Construction for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

Note #2 All QA test samples shall be from split samples.

If a member of the monitoring team observes the Contractor Test, note and sign under remarks.

The Project Engineer is responsible for:

1.) Reviewing control charts & Test summary sheets for accuracy and completeness,

2.) Checking sampling and testing procedures,

3.) Discussing QC problems with the Contractor,

4.) Obtaining Verification Samples,

5.) When additional testing is necessary, collect QA samples which have been acquired and retained by the Contractor and/or additional verification samples.

Note #3 For Mixture Quality Management, acceptance will be based on Contractor's test results as verified by Mn/DOT test results.

Note #4 Bituminous mixes composed entirely of Class A and/or Class B aggregates are not required to be tested for CAA (Coarse Aggregate Angularity).

Note #5 When the required sampling rate is one test per 500 tons, divide the bituminous mixture production planned for the day by 500, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 1000 tons, divide the bituminous mixture production planned for the day by 1000, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 2000 tons, divide the bituminous mixture production planned for the day by 2000, and round up to the next higher whole number; this will be the number of tests required for the day.

Note #6 The Department will select at least one of the two companion cores per lot to be tested for mat density. However, the Department may elect to test all companions to provide a direct verification of all individual and daily average test results. Agency representative observes all Contractor coring, sawing, measuring and testing, and takes possession of Mn/DOT cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

Note #7 Mn/DOT projects in the 2011 Construction season will require the calculated Adjusted Asphalt Film Thickness (AFT). VMA will still be calculated for informational purposes, but will not be used for acceptance criteria. The adjusted AFT shall be calculated each time a gradation test is required.

Note #8 When required, Longitudinal Joint (LJ) Density will be evaluated at random lots as determined by the engineer. Number of LJ lots for the day = number of lots calculated for mat density divided by .20 and rounding up to the next integer. Minimum of one LJ lot per day. For designated LJ lots the agency will test at least one of the mat density companion cores and at least one of the LJ companion cores.

Note #9 Random number generation and determination of random sample location shall be consistent with the Mn/DOT Bituminous Manual Section 5-693.7 Table A or Section 5 of ASTM D3665. The Engineer may approve alternate methods of random number generation.

III. Construction Items for Bituminous Specialty Items include the following:

- **2350 Permeable Asphalt Stabilized Stress Relief Course (PASSRC) and Permeable Asphalt Stabilized Base (PASB)**
- **2354 Micro-Surfacing**
- **2355 Bituminous Fog Seal**
- **2356 Bituminous Seal Coat**
- **2356 Otta Seal**
- **2356 Ultra-Thin Bonded Wearing Course (UTBWC)**
- **2357 Bituminous Tack Coat**

DEFINITIONS				
Sample Type	**Definitions** *Definitions from 23 CFR 637.203*	**Sample Location Determined By**	**Sample Taken By**	**Sample Tested By**
QA Quality Assurance	All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality			
QC Quality Control	All contractor/vendor operational techniques and activities that are performed or conducted to fulfill the contract requirements.	Contractor	Contractor	Contractor
Verification sampling and testing	Sampling and testing performed to validate the quality of the product.	Agency	Agency	Agency
IAST (*MnDOT Definition*)	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

III. Construction Items for Bituminous Specialty Items (Cont.)

Pay Item Number	Material	Material Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Testing		Minimum Lab Sample Testing	
				Rate	Size	Rate	Size
(a) 2350 (b) 2350	**1. Mix Design (Pre-Production)** (a) PASSRC (b) PASB	2350, 2360, 3139, 3151 & Special Provisions	Complete 1 design per mix	Contractor Submits Proposed JMF Blend & Agency Performs Mix Design	n/a	1/ JMF blend	80 lbs each coarse agg. 30 lbs each fine agg. 4 qt. asphalt binder
(c) 2354	(c) Micro-Surfacing	2354 & Special Provisions	Complete 1 per aggregate source	Review Submitted Mix Design		1/ mix design (See Note 1)	150 lbs. aggregate
(d) 2356	(d) Bituminous Seal Coat	2356 & Special Provisions					
(e) 2356	(e) UTBWC		Complete 1 design per mix			1/ JMF blend	
(a) 2350 (b) 2350	**2. Gradation** (a) PASSRC (b) PASB	2350, 2360 & Special Provisions	One per 1,000 ton with a minimum of one per day	1/day	Belt: 35 lbs.	—	—
(c) 2354	(c) Micro-Surfacing	2354 & Special Provisions	Stockpile: 1/1,500 tons (min. 1/ day) Machine Hopper: 1/500 tons (min. 1/day)	Stockpile & Machine Hopper: 1/day	Stockpile & Machine Hopper: 60 lbs	—	—
(d) 2356 (e) 2356	(d) Bituminous Seal Coat (e) Otta Seal	2356 & Special Provisions	Stockpile: 1/1,500 tons (min. 1/ day) Chip Spreader Hopper: 1/day	1/day	Hopper: 60 lbs	—	—
(a) 2350 (b) 2350	**3. Production % Crushing (CAA)** (a) PASSRC (b) PASB	2350, 2360 & Special Provisions	One per 1,000 with a minimum one per day	1/day	Belt: 35 lbs (Note 2)	—	—
(a) 2354	**4. Moisture (In Aggregate)** (a) Micro-Surfacing	2354 & Special Provisions	Machine Hopper: 1/500 tons (min. 3/day)	1/day	2 lbs.	—	—
(a) 2354	**5. Sand Equivalence** (a) Micro-Surfacing	2354 & Special Provisions	Stockpile or Machine Hopper: 1/500 tons (min. 1/day)	—	—	1/day (See Note 1)	25 lbs.

III. Construction Items for Bituminous Specialty Items (Cont.)

Pay Item Number	Material	Spec. No.	Minimum Contractor Quality Control Testing Rate	Minimum Agency Verification (Acceptance) Testing		Minimum (Lab) Sample Testing Observe All Sampling	
				Rate	Size	Rate	Size
(a) 2356	**6. Bituminous Mixture Tests** (a) UTBWC	2356, 3151 & Special Provisions	**Tests:** % AC, Gradation, Max Gravity, Adjusted AFT **Rate:** (1/300 tons, min. 1 per day)	1 per day	20 lbs (1 cylinder)	1/300 tons, minimum 1 per day	Truck: 55 lbs
(b) 2350	(b) PASSRC, PASB	3151 & Special Provisions	**Test:** Asphalt spot check **Rate:** minimum one per day	—	—	First load, then 1/250,000 gal.	1 qt.
(a) 2355	**7. Asphalt Binder Tests** (a) Bituminous Fog Seal	3151	**Test:** Dilution Rate **Rate:** one per project	—	—	First load, then 1/50,000 gal.	½ gal.*
(b) 2356	(b) UTBWC	2356, 3151 & Special Provisions	—	—	—	Asphalt Binder: First load, then 1/250,000 gal. Emulsified Asphalt: First load, then 1/50,000 gal.	Asphalt Binder: 1 qt. Emulsified Asphalt ½ gal.*
(c) 2354 (d) 2356 (e) 2356 (f) 2357	(c) Micro-Surfacing (d) Bituminous Seal Coat (e) Otta Seal (f) Bituminous Tack Coat	2354, 2356, 3151 & Special Provisions	—	—	—	First load, then 1 / 50,000 gal.	½ gal.*
(a) 2354	**8. Asphalt Binder Application Rate** (a) Micro-Surfacing	2354 & Special Provisions	Verify Application rate 3/day	Verify Application rate 1/day	—	—	
(b) 2355 (c) 2356 (d) 2356 (e) 2357	(b) Fog Seal (c) Bituminous Seal Coat (d) Otta Seal (e) Bituminous Tack Coat	2355, 2356, 2357 & Special Provisions	Verify Application rate 1/day	Verify Application rate 1/day	—	—	

***Use plastic containers for Emulsified Asphalt Samples**

Note 1: Contractor submits samples to Agency and Agency will retain and test at the discretion of the Engineer

Note 2: Run test on gradation sample

IV. Concrete Construction Items (www.dot.state.mn.us/materials/concrete.html)

The testing rates shown in this Schedule of Materials Control are minimums. All samples shall be taken in a random manner using an appropriate number generator. Take as many tests as necessary to ensure quality concrete. **All field samples shall be taken at the point of placement unless otherwise allowed by the Engineer.**

It is recommended that the Agency Plant Monitor be present during critical pours, such as superstructure or paving concrete (i.e. 3Y33, 3Y36, 3Y46, 3A21).

If any field test fails, reject the concrete or if the Producer makes adjustments to the load to meet requirements, record the adjustments on the Certificate of Compliance and the Weekly Concrete Report. Retest the load and record the adjusted test results. Make sure the next load is tested before it gets into the work.

If batching adjustments are made at the plant, test the adjusted load, before it gets into the work. Continue to test the concrete when test results are inconsistent or marginal.

The first load of concrete for any pour must have passing air content and slump results, prior to placing.

Material not meeting requirements shall not knowingly be placed in the work. If failing concrete inadvertently gets placed in the work, review either the Mn/DOT Standard Specifications for Construction or contact the Concrete Engineering Unit for monetary deductions recommendations.

It is recommended that the Agency representative continually monitor the progress of all concrete pours in the field and review Certificates of Compliances. It is not a recommended practice to only perform minimum testing requirements and leave the pour.

Should circumstances arise on a project which makes the testing rate impractical, contact the Concrete Engineering Unit.

DEFINITIONS				
	Description	**Sample Location Determined By**	**Sample Taken By**	**Sample Tested By**
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor is required to test this sample. The results shall be used as part of the QC program.	Agency	Agency	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Plant Batching Materials

Remarks:

(1) All materials must come from certified or qualified sources. All certified sources must state so on the delivery invoice.

(2) The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.

Sample Sizes:

Cementitious: 2 kg (5 lb)

Admixture: 0.25 L (1/2 pt) Producer obtains samples from dispensing tubes. Store samples in plastic container.

Water: 3.5 L (1 gal) Store sample in a clean glass or plastic container.

Pay Item No.	Material	Spec. No.	Minimum Required Sampling Rate for Laboratory Testing	Form No.
2301 2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Portland Cement Slag Blended Cement	3101 3102 3103	1 sample per project or 1 every 3 months, whichever is less. The Producer obtains and stores the sample in a sealed container provided by the Agency, and includes the supplier's delivery invoice from which the sample is obtained. Take additional samples as Concrete Engineer directs.	24300 ID Card Cement Samples
	Fly Ash	3115		24308 ID Card Fly Ash Samples
	Admixtures (Accelerating, Retarding, Water-Reducing, Air-Entraining, etc.)	3113	For Concrete Paving: 1 sample of each shipment For Other Concrete: 1 sample per project or 1 every 3 months, whichever is less. The Producer obtains and stores the sample in a sealed container provided by the Agency.	2410 Sample ID Card
	Water	3906	1 sample from any questionable source	2410 Sample ID Card
2301	Alkali Silica Reactivity (ASR) Testing	2301	1 per paving project per sand source Write "Project Specific ASR Testing" on 2410 Sample ID card for the first sand quality and cementitious samples submitted.	

Certified Ready-Mix - Concrete Plant Production

Remarks:

(1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract.
(2) All gradation and quality tests require companion samples. Samples taken at location identified on Contact Report located at plant.
(3) Perform Quality testing as directed by the Concrete Engineer.

Minimum Sample Sizes:

Gradation Test:

+19 mm (3/4" Plus)	12 kg (25 lb.)
–19 mm (3/4" Minus)	5 kg (10 lb.)
CA-70, CA-80	2.5 kg (6 lb.)
Sand	500 g (1.1 lb.)

Moisture Test:

Coarse Aggregate	2000 g
Fine Aggregate	500 g

Quality Sample Size for Lab Submittal:

+19 mm (3/4" Plus)	24 kg (50 lb.)
–19 mm (3/4" Minus)	15 kg (30 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	2461 3126 3137	When over 20 m^3 (yd^3) of Agency concrete produced per day: **Coarse:** 1 per 100 m^3 (yd^3) **Fine:** 1 per 200 m^3 (yd^3) Passing aggregate gradations are required prior to the start of concrete production each day. Performing testing on representative material at the end of the most recent day of production is allowed. Washing the fine aggregate gradation (QC) sample is not required when the result on the -75µm (#200) sieve of the unwashed sample is less than 1.0%, Hold QA (QC companion) samples until they are picked up by the Agency monitor. Discard after 14 calendar days if not picked up. **For Contractor Mix Designs utilizing an approved JMF:** 1 per 400 m^3 (yd^3) or completed every 4 hours, whichever results in the higher sampling rate.	None	21763 Concrete Aggregate Worksheet (QC/QA) 2449 Weekly Concrete Aggregate Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix - Concrete Plant Production (cont.)					
Pay Item No.	**Test Type**	**Spec. No.**	**Producer/Contractor Testing**	**Agency Testing**	**Form No.**
2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Gradation Testing (Verification/ Verification Companion) (5-694.145 and 5-694.148)	2461 3126 3137	Test the Verification Companion sample. Complete on the day the sample was taken. Wash all fine aggregate Verification Companion samples.	**Coarse and Fine:** 1 Verification sample per week when Agency production is 1 or 2 days per week. 2 Verification samples per week when Agency production is 3 or more days per week. When ≤ 20 m^3 (yd^3) of Agency concrete is produced **per week,** Verification samples are not required. Identify verification samples with a "V" on the Sample ID Card and the verification companion sample. Include verification companion results.	2449 Weekly Concrete Aggregate Report 24143 Weekly Certified Ready-Mix Plant Report (Verification)
	Quality Testing including Coarse Aggregate Testing on -75µm (#200) (5-694.146)	3126 3137	Test at Contractor's Discretion	1 test each fraction per month Identify quality samples with a "Q" on the Sample ID Card and the Quality companion sample.	2410 Sample ID Card
	Aggregate Moisture Testing (QC) (5-694.142)	2461	**When over 20 m^3 (yd^3) of Agency concrete produced per day:** **Coarse and Fine:** 1 per 200 m^3 (yd^3) or completed every 4 hours, whichever results in the higher sampling rate. - Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. - If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Agency or private work.	None	2152 Concrete Batching Report

Concrete Pavement - Concrete Plant Production

Remarks:

(1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.

(2) When w/c incentives apply according to 2301:

a) Contractor QC Technician and Agency Plant Monitor are required to be present during the entire pour. **If w/c incentives do not apply, the Agency Plant Monitor shall monitor as necessary to ensure compliance with the requirements of the Contract.**

b) A certified ready-mix plant shall be **dedicated (provides concrete only to the concrete paving project).**

(3) All gradation samples shall be taken in the presence of the Agency, unless otherwise authorized by the Engineer. All samples shall be taken off the belt leading to the weigh hopper unless otherwise approved by the Engineer. All gradation and quality tests require companion samples.

(4) Perform Quality testing as directed by the Concrete Engineer.

Minimum Sample Sizes:

Gradation Test:		**Moisture Test:**		**Quality Sample Size for Lab Submittal:**		**75um (#200) Coarse Aggregate Sample Size**	
+19 mm (3/4" Plus)	12 kg (25 lb.)	Coarse Aggregate	2000 g	+19 mm (3/4" Plus)	24 kg (50 lb.)	+19 mm (3/4" Plus)	5000 g (10 lb.)
–19 mm (3/4" Minus)	5 kg (10 lb.)	Fine Aggregate	500 g	–19 mm (3/4" Minus)	15 kg (30 lb.)	–19 mm (3/4" Minus)	2500 g (6 lb.)
CA-70, CA-80	2.5 kg (6 lb.)			Fine Aggregate	15 kg (30 lb.)		
Sand	500 g (1.1 lb.)						

<table>
<tr><th>Pay Item No.</th><th>Test Type</th><th>Spec. No.</th><th colspan="2">Producer/Contractor Testing</th><th colspan="2">Agency Testing</th><th>Form No.</th></tr>
<tr><td rowspan="3">2301</td><td rowspan="3">Gradation Testing (QC/QA) (5-694.145 and 5-694.148)</td><td rowspan="3">3126
3137</td><td><u>For a concrete paving batch plant:</u>

<u>When over 200 m³ (250 yd³) is produced per day:</u>
1 per 1200 m³ (1500 yd³) or completed 1 per ½ day, whichever results in the higher sampling rate.</td><td><u>For a certified ready-mix plant:</u>

<u>When over 20 m³ (yd³) is produced per day:</u>
1 per 400 m³ (yd³) or completed every 4 hours, whichever results in the higher sampling rate.</td><td colspan="2">Test the first 4 QA samples of production each time the Contractor mobilizes the plant or changes aggregate sources.

<u>For a concrete paving batch plant:</u>

1 per day on randomly selected samples thereafter.</td><td><u>For a certified ready-mix plant:</u>

1 per 1000 m³ (yd³) or 1 per week, whichever results in higher sampling rate on randomly selected samples thereafter.</td><td rowspan="3">21764 Concrete Aggregate Worksheet JMF

Well-graded Concrete Aggregate Worksheet</td></tr>
<tr><td colspan="2">Performing testing on representative material at the end of the most recent day of production is allowed.

If well-graded aggregate incentives apply: Use the Contractor's gradation results for well-graded aggregate incentive calculations as verified by Agency testing</td><td colspan="2">Identify the gradation samples with "QA Gradation" on the Sample ID Card and include the JMF Number and the QC Gradation results.

If Coarse Aggregate Quality Incentive/Disincentives apply: The Agency may also use the QA gradation sample for the Coarse Aggregate Quality incentive/disincentive testing. In this case, notify the Producer/Contractor to double the QC/QA gradation sample size.</td></tr>
</table>

<table>
<tr><th colspan="8">Concrete Pavement - Concrete Plant Production</th></tr>
<tr><th>Pay Item No.</th><th>Test Type</th><th>Spec. No.</th><th colspan="2">Producer/Contractor Testing</th><th colspan="2">Agency Testing</th><th>Form No.</th></tr>
<tr><td rowspan="3">2301</td><td>Coarse Aggregate Testing on -75 µm (#200) (QC/QA) (5-694.146)</td><td>3137</td><td colspan="2">Test the first sample and then at least 1 of the next 3 samples on the first day of production and each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.

1 test per day thereafter

Test these samples at the plant.</td><td colspan="2">1 randomly selected sample on the first day of production and each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.

Test these samples at the plant.</td><td rowspan="2">21764 Concrete Aggregate Worksheet JMF</td></tr>
<tr><td rowspan="2">Aggregate Moisture Testing (QC/Verification) (5-694.142)</td><td rowspan="2"></td><td><u>For a concrete paving batch plant:</u>

If w/c incentives do not apply:
1 per 750 m^3 (1000 yd^3) or completed every 4 hours, whichever results in the higher sampling rate.</td><td><u>For a concrete paving batch plant:</u>

1 test per week thereafter</td><td><u>For a certified ready-mix plant:</u>

1 per 1000 m^3 (yd^3) or 1 per week, whichever results in the higher sampling rate on randomly selected samples thereafter.</td></tr>
<tr><td><u>For a certified ready-mix plant:</u>

If w/c incentives do not apply:
1 per 200 m^3 (yd^3) or completed every 4 hours, whichever results in the higher sampling rate</td><td><u>For a concrete paving batch plant:</u>

If w/c incentives apply:
1 per 750 m^3 (1000 yd^3) or completed every 4 hours, whichever results in the higher sampling rate.

Take initial samples for aggregate moisture testing within the first 175 m^3 (250 yd^3).</td><td><u>For a certified ready-mix plant:</u>

If w/c incentives apply:
1 per 200 m^3 (yd^3) or completed every 4 hours, whichever results in the higher sampling rate.

Take initial samples for aggregate moisture testing within the first 100 m^3 (yd^3).</td><td>Concrete W/C Ratio Calculation Worksheet</td></tr>
<tr><td colspan="2">Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day.

If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed.</td><td colspan="2">If w/c incentives apply:
Use aggregate moisture results for determining the water content to calculate the w/c ratio incentive/disincentive.

Do not leave samples unattended.</td><td></td></tr>
</table>

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Pavement - Concrete Plant Production						
Pay Item No.	**Test Type**	**Spec. No.**	**Producer/Contractor Testing**	**Agency Testing**		**Form No.**
2301	Water Content Verification Testing **(Microwave Oven Verification) (5-694.532)**	2301	Obtain the plastic concrete sample at the plant.	**If w/c incentives apply:** Microwave oven verification testing to verify the w/c ratio is completed in conjunction with Agency aggregate moisture testing. **Do not leave samples unattended.**		Concrete W/C Ratio Calculation Worksheet
				<u>For a concrete paving batch plant:</u> Take initial sample for microwave oven verification testing within the first 175 m^3 (250 yd^3). At least one additional verification test should be taken if more than 750 m^3 (1000 yd^3) is produced in a day.	**<u>For a certified ready-mix plant:</u>** Take initial sample for microwave oven verification testing within the first 100 m^3 (yd^3). At least one additional verification test should be taken if more than 400 m^3 (yd^3) is produced in a day.	
	Unit Weight (QC) (5-694.542)		Test one load of concrete per day at the plant.	None		
	Air Content (QC) (5-694.541)	2461	Test the first load of concrete at the plant.	None		

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Pavement - Concrete Plant Production

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Quality Testing including Coarse Aggregate Testing on -75 µm (#200)	3126 3137	**Prior to concrete production:** Test the Agency's pre-production sample at the Contractor's discretion **During concrete production:** Test the -75µm (#200) on the Quality companion sample the day it was sampled. All other testing is at the Contractor's discretion	**Prior to concrete production:** Obtain pre-production samples for quality testing at least 16 hours prior to concrete production. Samples may be taken from the stockpile and the -75µm (#200) test may be performed at the lab instead of at the plant at the discretion of the Engineer. **During concrete production:** 1 randomly selected test each fraction every 17,500 m^3 (20,000 yd^3) of production. Split the Quality sample 4 ways: 1) Provide 2 quarters of the sample to the Producer/Contractor. 2) Test the -75µm (#200) on the quality sample at the plant the day it was sampled. 3) Submit the remaining sample to the lab for quality testing including testing on the -75µm (#200) sieve. Identify quality samples with a "Q" and record the QC and QA -75µm (#200) test results on the Sample ID Card. Identify the Quality Companion samples with a "Q"..	2410 Sample ID Card
2301	Coarse Aggregate Quality Testing for Incentive/ Disincentive	3137	Test at Contractor's discretion	**If coarse aggregate quality incentives apply:** Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. Sample the 2 largest fractions in accordance with the following table and 2301:	2410 Sample ID Card Coarse Aggregate Quality Incentive/ Disincentive Worksheet

Coarse Aggregate Quality Incentive/Disincentive Sampling Rates

Plan Concrete m^3 **[cubic yards]**	Samples per fraction (n)
2,900 – 6,250 [3,500 – 7,500]	3
6,251 – 8,500 [7,501 – 10,000]	5
8,501 – 21,000 [10,001 – 25,000]	10
21,001 – 42,000 [25,001 – 50,000]	15
42,001+ [50,001+]	20

Identify incentive samples on the Sample ID Card with "I/D"

Concrete Field Materials (Refer to Metallic Materials and Metal Products for sampling requirements for concrete reinforcement.)

Sample Sizes:

Joint Materials:

Hot Poured Elastomeric: 2.26 kg (5 lb) Take samples from application wand, store in steel container.
Silicone Joint Sealer: 0.5 liter (1 pt) Store sample in steel container.
Preformed Elastomeric: 2 m (6 ft)
Preformed: 0.25 m^2 (2 ft^2)

Curing Materials:

Burlap: 1 m^2 (yd^2)
Paper and Plastic: 0.25 m^2 (2 ft^2)
Membrane Compound 1 liter (1 qt) If sampling is required, materials must be thoroughly stirred or agitated immediately prior to taking sample. Store sample in steel container and cover immediately.

Pay Item No.	Material	Spec. No.	Minimum Required Field Sampling Rate	Form No.
2301 2302 2401 2411 2514 2521 2531	Preformed	3702	Visual Inspection	2410 Sample ID Card
2301 2302 2401	Preformed Elastomeric Type	3721	1 per lot Only joint materials from qualified sources are allowed. The most current lists can be found at www.dot.state.mn.us/products	
	Silicone Joint Sealer	3722		
	Hot Poured Elastomeric Type	3723 3725		
2301 2302 2401 2411 2514 2520 2521 2531 2533	Burlap	3751	Visual Inspection	
	Paper	3752	Visual Inspection - Must be white opaque	
	Membrane Curing Compound	3754 3754AMS 3755	Visual Inspection – Use only Pre-Approved Curing Compounds. Refer to the approved products list of curing compounds for **pre-approved** lots at http://www.mrrapps.dot.state.mn.us/CuringCompoundProducts/curingcompounds.aspx	
	Plastic	3756	Visual Inspection -Must be white opaque and free from holes. A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Bridges and General Concrete				
Pay Item No.	**Test Type**	**Spec. No.**	**Agency Testing**	**Form No.**
2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2520 2521 2531 2533 2545 2550 2554 2557 2564 2565	Air Content (Verification) (5-694.541)	2461	1 per 100 m^3 (yd^3) Test first load each day per mix Test when adjustments are made to the mix.	2448 Weekly Concrete Report If concrete quantities on the entire project total < 100 m^3 (yd^3), document the test results Weekly Concrete Report or on Form 02415 or Form 2403 Inspection Report for Small Quantities.
	Slump (Verification) (5-694.531)	2461	1 per 100 m^3 (yd^3) Test first load each day per mix Test as necessary to verify passing slump No slump testing required for slipform placement	
	Concrete Temperature (Verification) (5-694.550)	2461	Record temperature each time air content, slump, or strength test specimen is performed/fabricated.	
	Compressive Strength (Verification) (5-694.511)	2461	1 cylinder (28-day) per 100 m^3 (yd^3) 1 cylinder (28-day) per day for sidewalk and curb and gutter Cast up to three (3) control cylinders. Any additional control cylinders are the responsibility of the Contractor. Mn/DOT standard cylinder mold size is 100 x 200 mm (4 x 8 inch). If aggregate has a maximum size greater than 31.5 mm (1-1/4 inch), use 150 x 300 mm (6 x 12 inch) molds.	2409 ID Card Concrete Test Cylinder

Concrete Field Testing – Cellular Concrete				
Pay Item No.	**Test Type**	**Spec. No.**	**Agency Testing**	**Form No.**
2519	Compressive Strength (Verification) **(5-694.511)**	2461 2519	1 set of 4 cylinders (28-day) per day 100 x 200 mm (4 x 8 inch) cylinders shall be filled in two equal lifts, do not rod the concrete, lightly tap the sides, cover and move to area with minimal or no vibration. Do not disturb for 24 hours.	2409 ID Card Concrete Test Cylinder

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Concrete Pavement					
Pay Item No.	**Test Type**	**Spec. No.**	**Contractor Testing**	**Agency Testing**	**Form No.**
2301	Air Content Before Consolidation (QC/QA) (5-694.541)	2461	1 per 300 m^3 (300 yd^3) or 1 per hour, whichever is less Test first load each day per mix	1 correlation air test per day	2448 Weekly Concrete Report
	Air Content After Consolidation (QC/QA) (5-694.541)	2461	Test 1 air content per ½ day of slip form paving to establish an air loss correction factor (ACF). See Special Provisions for additional information.	1 air test per day	
	Slump (QC/QA) (5-694.531)	2461	**For fixed form placement:** 1 per 300 m^3 (300 yd^3) and as directed by the Engineer Test first load each day per mix **For slipform placement:** No slump testing is required	**For fixed form placement:** 1 slump test per day **For slipform placement:** No slump testing is required	
	Concrete Temperature (QC/QA) (5-694.550)	2461	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Contractor.	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Agency.	
	Flexural Strength (QC) (5-694.521)	2301	1 beam (28-day) per day - Make additional control beams as necessary. - Control beams shall be made within the last hour of concrete poured each day. Fabricate beams, deliver beams to curing site, and clean beam boxes. Cylinders may be substituted for beams at the discretion of the Engineer	Supply beam boxes, cure, and test beams. MnDOT standard beam box size is 6" x 6" x 20" unless other sizes or types are approved by the Concrete Engineer.	2162 Concrete Test Beam Data
	Concrete Pavement Texture (QC)	2301	1 per 1000 linear feet per lane of concrete pavement at locations determined by the Agency. All adjoining lanes shall be tested at the same location if paved at the same time. The Contractor supplies all materials necessary to perform the required testing.	Determine texture testing locations using random numbers.	Concrete Texture Worksheet
	Thickness (QC/Verification)	2301	The Contractor drills concrete cores at locations determined by the Agency. The Contractor probes the plastic concrete at locations determined by the Agency.	Determine probing and coring locations using random numbers. Initial pavement at core locations and re-initial the sides of specimens after coring to clearly verify their authenticity.	24327 Field Core Report Probing and Coring Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Concrete Pavement					
Pay Item No.	**Test Type**	**Spec. No.**	**Contractor Testing**	**Agency Testing**	**Form No.**
2301	Surface Smoothness	2301	Contractor provides Mn/DOT certified inertial profiler results for the entire project as required by the Contract.	None	Concrete Profile Summary Worksheet

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing - Low Slump Concrete for Bridge Deck Overlays

Remarks:

(1) Mix design is provided by Mn/DOT on the back of the Form 21412 Weekly Report of "Low Slump Concrete" unless otherwise specified in the Contract.
(2) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(3) Perform Quality testing as directed by the Concrete Engineer.

Minimum Sample Sizes:

Gradation Test:

CA-70	2.5 kg (6 lb.)
Sand	500 g (1.1 lb)

Quality Sample Size for Lab Submittal:

Coarse Aggregate	24 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2404	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148))	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction per source No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site. Identify quality samples with a "Q" on the Sample ID Card and the Quality companion sample.	2410 Sample ID Card 21412 Weekly Report of "Low Slump Concrete"
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day	
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day For concrete from a concrete-mobile, allow mix to hydrate 4 to 5 minutes before slump test to assure all cement is saturated.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder (28-day) per 30 m^3 (yd^3)	2409 ID Card Concrete Test Cylinder

Concrete Field Testing – Concrete Pavement Repair (CPR)

Remarks:

(1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract.
(2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)
(3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(4) Perform Quality testing as directed by the Concrete Engineer.

Minimum Sample Sizes:

Gradation Test:

–19 mm (3/4" Minus)	5 kg (10 lb.)
CA-70, CA-80	2.5 kg (6 lb.)
Sand	500 g (1.1 lb.)

Quality Sample Size for Lab Submittal:

Coarse Aggregate	24 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction per source. No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site. Identify quality samples with a "Q" on the Sample ID Card and the Quality companion sample.	2410 Sample ID Card
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day.	2448 Weekly Concrete Report
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day. Allow mix to hydrate 5 minutes before slump test to assure all cement is saturated.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder (28-day) per 30 m^3 (yd^3)	2409 ID Card Concrete Test Cylinder

Concrete Field Testing –Dowel Bar Retrofit (DBR)

Remarks:

(1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.
(2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)
(3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(4) Perform Quality testing as directed by the Concrete Engineer.

Minimum Sample Sizes:

Gradation Test:

CA-80	2.5 kg (6 lb.)
Sand	500 g (1.1 lb)

Quality Sample Size for Lab Submittal:

Coarse Aggregate	24 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction per source. No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site. Identify quality samples with a "Q" on the Sample ID Card and the Quality companion sample.	2410 Sample ID Card
	Dowel Bar Retrofit Material Compressive Strength (Verification) (5-694.511)	2301 2302	None	During the pre-production test operations: 1 set of 3 cylinders tested at a rate as directed by the Engineer. Testing may need to be repeated if any problems with the dowel bar retrofit material are encountered. First day of production: 1 set of 3 cylinders tested at a rate as directed by the Concrete Engineer. After the first day of production: 1 cylinder per day during production tested at rate determined by Engineer to determine opening to traffic strength.	2409 ID Card Concrete Test Cylinder

V. Landscaping and Erosion Control Items

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105 2571 2575	1. Manufactured Topsoil borrow [a] Salvaged Topsoil (stockpiled)	3877.2	None	From each source: One composite sample for the first 765 m^3 (1,000 Cu yd). One composite sample for each additional 2,300 m^3 (3,000 Cu yd). Small quantities under 75 m^3 (100 Cu yd.), no sample required. One composite sample for each stockpiled topsoil, test for fertility.	10 kg (20 lb.)	[a] Test results showing meets specifications. Testing for all topsoil for fertility send directly to Maplewood Laboratory from project. Testing takes about four weeks after delivery of the sample to the Department Laboratory. Sampling shall be done once source is identified or existing topsoil is stockpiled.
2571 2575 2577	2. Plant Stock & Landscape Materials [b]	3861 and 2571.2A1	Field Inspection at Job Site, submit itemized report for each shipment [c.]			[b] Preliminary inspection will not be done at the source. Material must be in accordance with the Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects. [c] Utilize "Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects" to determine and measure minimum and maximum criteria thresholds. The following documentation must be provided: 1. A Mn/DOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment 2. A valid copy of a nursery stock (dealer or grower) certificate registered with the MN Dept. of Agric. And/ or a current nursery certificate/license from a state or provincial Dept. of Agric. for each plant stock supplier. 3. A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier. 4. Plant material shipped from out-of-state nursery vendors subject to pest quarantines must be accompanied by documentation certifying all plants shipped are free of regulated pests. 5. Bills of lading (shipping documents) for all materials delivered. 6. Invoices for all materials to be used. 7. Each bundle, bale, or individual plant must be legibly and securely labeled with the name and size of each species or variety.
2502 2573 2575 2577	3. Erosion Control Blanket [d]	3885	Visual Inspection	Random - See Footnote [d]	1 m^2 (1 Sq yd)	[d] Check Web site for list of approved products.. www.dot.state.mn.us/products

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2573 2577	4. Erosion Control Netting [e]	3885	Visual Inspection		1 m^2 (1 Sq yd)	[e] Check Web site for list of approved products. www.dot.state.mn.us/products
2573	5. Silt Fence [f]	3886	Check Product Label. Obtain Certificate of Compliance with MARV values		1 m^2 (1 Sq yd)	[f] Check Approved/Qualified Products List (A/QPL) of accepted geotextiles www.dot.state.mn.us/products
2573	6. Flotation Silt Curtain [g]	3887	Visual Inspection			[g] Accepted, based on manufacturers' certification of compliance. Check weight of fabric.
2573 2575	7. Erosion Stabilization Mat [h]	3885	Visual Inspection		1 m^2 (1 Sq yd)	[h] Check Web site for list of approved products. www.dot.state.mn.us/products
2573	8. Filter Logs	3897	Visual Inspection	None		
2573	9. Flocculants [i]	3898	Visual Inspection	None		[i] Certificate of Compliance and MSDS to the Engineer.
2571 2575	10. Fertilizer [j]	3881	Visual Inspection			[j] Bagged: Inspected on the basis of guaranteed analysis. Rate based on fertility analysis of slope dressing/topsoil. Bulk: Inspector to obtain copy of invoice of blended material stating analysis. Check the type specified.
2571 2575	11. Agricultural Lime [k]	3879	One gradation test for each 180 Metric Ton (200 ton)			[k] Contractor must supply amount of ENP (Equivalent Neutralizing Power) for each shipment.
2575 2577	12. Mulch Material A. Type 3 Mulch - Certified Weed Free (Certified sources only) [l]	3882	Visual Inspection, Check if from Certified Vendor by Minnesota Crop Improvement Association. Must be tagged, grain straw only.			[l] Certified mulch will be indicated by label.

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2571 2575 2577	13. Mulch Material B. Type 6 Mulch – Woodchips	3882	Visual Inspection, one gradation per supplier. Obtain Certificate of Compliance.	Gradation 1/10,000 yd^3 per supplier.		All wood chips supplied by a supplier outside the Emerald Ash Borer quarantine area or have an Emerald Ash Borer Compliance Agreement with the MDA.
2502 2575 2577	14. Seeds A. Seeds (Certified Vendors Only) (Mixes 22-000 and 25-000 series) [m]	3876	Check for Certified Vendor tag from Minnesota Crop improvement Association. If materials are on hand and past the twelve months, testing must be done.		0.5 L (1 pint)	[m] Periodic sampling taken by Office of Environmental Services. Any moldy or insect contaminated seed must be rejected.
2502 2575 2577	14. Seeds B. Native Seed (Mixes 30-000 series) certified seed only [n]	3876	Check if from Certified Vendor by Minnesota Crop Improvement Association, Must be tagged. If materials are on hand and past the twelve months, testing must be done.			[n] Certified seed will be indicated by label on containers. Reject all moldy or insect contaminated seed. Periodic sampling taken by Office of Environmental Services.
2575	15. Sod [o]	3878	A certified tag by Minnesota Crop Improvement Association for Salt tolerant sod. Final Visual Inspection at site.			[o] A Certificate of Compliance must be furnished by the producer to the Engineer for the type of sod supplied showing correct grass varieties.
2571 2575	16. Compost A. Compost Certified Source [p]	3890	Visual Inspection			[p] Check Approved/Qualified Products List (A/QPL), retain Certificate of Compliance.
2571 2575	17. Compost B. Compost Non-Certified Source [q]	3890	Inspection of source 6 weeks prior to delivery.			[q] Retain Certificate of Compliance, 6 weeks prior to delivery.
2575	18. Hydraulic Soil Stabilizer [r]	3884	Slump Test for Type 8	None		[r] Check Approved/Qualified Products List (A/QPL).

VI. Chemical Items

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401	Asphalt Plank	3204	Visual Inspection	1 per 1,000 plank or less of each thickness in each shipment	3 – 1 m (yd) pieces samples from different planks	
2131	Calcium Chloride	3911	Visual Inspection	Liquid: 1 per 40,000 L (1 per 10,000 gal) Dry: 1 per shipment	0.5 L (1 pint) or 0.5 kg (1 lb.) in Plastic Container	
2131	Magnesium Chloride	3912	Visual Inspection	1 per 40,000 L (1 per 10,000 gal.)	0.5 L (1 pint) in Plastic Container	
2331	Hot-Pour Crack Sealant for Crack Sealing/Filling	3719 3723 3725	Visual Inspection	1 per lot. Take samples from application wand. Use caution when handling hot containers	2.26 kg (5 lb.) in a 1gal steel container.	
2481	Waterproofing Materials Membrane Waterproofing System	3757	Visual Inspection	1 per shipment (Membrane Only)	0.1 m^2 (1 Sq Ft)	Only waterproofing systems from qualified sources are allowed for use. The most current list can be found at www.dot.state.mn.us/products Membrane Waterproofing System: The manufacturer shall submit a one square foot sample of the membrane along with a letter of Certification and test results stating that the membranes meet the requirements of this specification. Other components of the waterproofing system do not need to be sampled for testing.

VI. Chemical Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2481	Waterproofing Materials Three Ply System Asphalt Primer	3165	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Waterproofing Asphalt	3166	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Fabric	3201	Visual Inspection	1 per shipment	1 m^2 (1 Sq yd)	
2582	Waterborne Latex Traffic Marking Paint.	3591	Visual Inspection	1 per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Qualified Products List are allowed for use. The most current Qualified Products list can be found at www.dot.state.mn.us/products
2582	Epoxy Traffic Paint	3590	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Qualified Products List are allowed for use. The most current Qualified Products list can be found at www.dot.state.mn.us/products
2582	Traffic Marking Paint	Special Provisions	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Qualified Products List are allowed for use. The most current Qualified Products list can be found at www.dot.state.mn.us/products For traffic marking paints other than Waterborne Latex and Epoxy. See Special Provision for Qualified Products List.
2564	Non-Traffic Striping Paints	3500 Series Special Provisions	Visual Inspection		0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certification of Compliance. For all others, see Special Provisions. Send color sample to Chemical Laboratory for color matching.

VI. Chemical Items (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2478	Bridge Structural Steel Paint	3520	Visual Inspection	Certificate of Compliance with each batch/lot for each component of the paint system to the Engineer. Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color		**Form 02415** List batch numbers and retain Certificate of Compliance. Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/products
	Exterior Masonry Paint	3584	Visual Inspection	1 per lot Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/products
	Noise Wall Stain	Special Provisions	Visual Inspection	Certificate of Compliance for each batch/lot of paint. Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.		**Form 02415** List batch numbers and retain Certificate of Compliance Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/
2582	Drop-on Glass Beads	3592	Visual Inspection	1 per lot	1 L (qt.)	**Form 02415** List batch numbers and retain Certificate of Compliance Only glass beads from Qualified Products List are allowed for use. The most current Qualified Products List can be found at www.dot.state.mn.us/products
2502 2581 2582	Pavement Marking Tape	3354 3355 Special Provisions	Visual Inspection	1 clean sample of each color per lot	3 m (3 yds.)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only pavement marking tape from Qualified Products List are allowed for use. The most current Qualified Products List can be found at www.dot.state.mn.us/products

VI. Chemical Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2540 2563 2564 2565 2582	Signs and Markers	3352	Visual Inspection	None unless material suspect		**Form 02415** Only Signs and Markers from Qualified Products List are allowed for use. The most current Qualified Products List can be found at www.dot.state.mn.us/products

VII. Metallic Materials and Metal Products

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2554	1. Guard Rail A. Fittings - Splicers, Bolts, etc.	3381	Visual Inspection	Bolts: 2 Post bolts and 4 splice bolts with nuts for each 1,000 units or less.		**Form 02415 or 2403** To be approved before use. Materials from H&R may be pre-sampled and tested. Call the MN/DOT inspector at 218-846-3613 to see if material has been approved. For non-pre-tested, submit laboratory samples at required rate. For small quantities, lab samples are not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less Terminals - 10 or less Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1.B.i. Non-High Tension Guard Rail Cable	3381	Visual Inspection	1 sample from each spool	1.2 m (4 ft)	**Form 02415 or 2403** See VII.1.A.
2554	1. B.ii. High Tension Guard Rail Cable	Special Provisions	Visual Inspection	1 sample per 50,000 feet	1.2 m (4 ft)	
2554	1. Guard Rail C. Structural Plate Beam	3382	Visual Inspection	One sample from one edge of each 200 rail sections or one sample of each 100 terminal sections	Full depth x 0.25 m (full depth x 10")	**Form 02415 or 2403** See VII.1.A.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2554 2564	2. Steel Sign Posts	3401	Visual Inspection & Certification from Contractor of compliance with Domestic source requirement under 1601, if applicable.	Two posts per shipment of each mass per unit length. Submit shortest full sized length of each weight, not a scrap piece.	See note	**Form 02415 or 2403** Check domestic steel requirement under 1601
2554 2557	3.Posts for Traffic & Fence A.Steel fence posts, brace bars, and rails	3403 3406	Visual Inspection	One sample per 500 pieces. Submit full length for posts used in the ground (line, terminal, "C" and anchor posts), and 5' length of top rail and brace bar.		**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance and certified mill analysis in project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence B. Components: includes cup, cap, nut, bolt, end clamp, tension band, truss rod tightener, hog ring, tie wire, tension stretcher bar, truss rod, clamp, & tension wire	3376	Visual Inspection	1 each of cup, cap, nut, bolt, end clamp, tension bands, truss rod tightener, 12 hog rings, 6 tie wires, 1 tension stretcher bar; 1 truss rod, cut to 2-foot min. with threaded section, 3 feet of tension wire.		**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence C.Gates	3379	Visual Inspection	No sample required. See notes.		**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence D. Barbed Wire	3376	Visual Inspection.	One full height sample per 50 rolls	1 m (3 ft)	**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for cert. form on right side of page, www.dot.state.mn.us/materials/lab.html

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2557	3. Fence E. Woven Wire Fabric	3376	Visual Inspection	One full height sample per 50 rolls	1 m (3 ft)	**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for cert. form right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence F. Chain Link Fabric	3376	Visual Inspection	One full height sample for each 5,000 ft of fencing.	0.3 m (1 ft)	**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. Retain Certificate of Compliance in the project file. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2402	4. Water Pipe and other Piping Materials	3364, 3365, 3366 & Special Provisions				**Form 02415 or 2403** Check domestic steel requirement under 1601 Special Provision. To be identified & tested if necessary prior to use. See Special Provisions.
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel A. Bars – Uncoated	3301	Visual Check for Size and Grade Marking	No Field Sample Necessary		**Form 02415 or 2403** For Uncoated bars - Retain Certificate of Compliance and Certified Mill Analysis in Project File.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel B. Bars - Epoxy Coated	3301	Visual Check for Size and Grade Marking and "Inspected" tag	One sample (1 bar) of each size bar for each day's coating production	1 m (3 ft)	**Form 02415 or 2403** For Epoxy-Coated bars, steel will be tagged "Inspected" when it has been sampled and tested by Mn/DOT prior to shipment, and it will be tagged "Sampled" when testing has not been completed prior to shipment. If the Epoxy-Coated bars are not tagged "Sampled" or "Inspected", submit samples with copies of the Certificate of Compliance, and Certified Mill Analysis. Retain originals of the Certificate of Compliance and Certified Mill Analysis in the project file.
2401	5. Reinforcing Steel C. Bars Stainless Steel	Special Provisions		One sample (2 Bars) per heat per bar size	1 m (3 ft)	Submit copies of mill test reports with samples, retain originals in project file
2401 2411 2452 2472 2564	5. Reinforcing Steel D. Spirals	3305		One per shipment	1 m (3 ft)	**Same as 5.B**
2201 2301 2401 2411 2412 2472 2531	5. Reinforcing Steel E. Steel Fabric	3303	Visual Inspection	No Field Sample Necessary		Retain Certificate of Compliance in project file.
2201 2301 2401 2411	5. Reinforcing Steel F. Dowel Bars	3302		One Dowel Bar from each shipment	Full Size Dowel Bars	For all types of dowels – Each project shall have a Certificate of Compliance from the Manufacturer certifying that all materials used in fabrication of the dowel bars and baskets comply with all applicable specifications. The Manufacturer shall maintain all records necessary for certification by project. The Certificate of Compliance shall be submitted to the Project Engineer.